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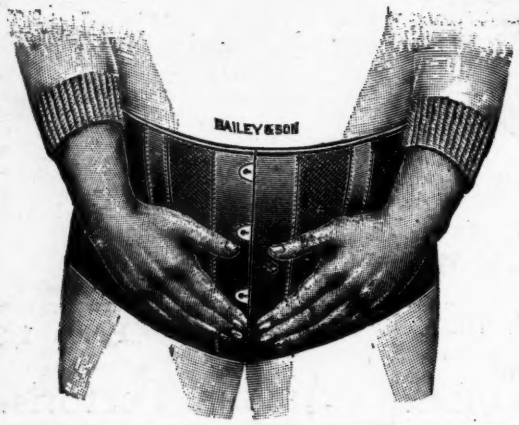

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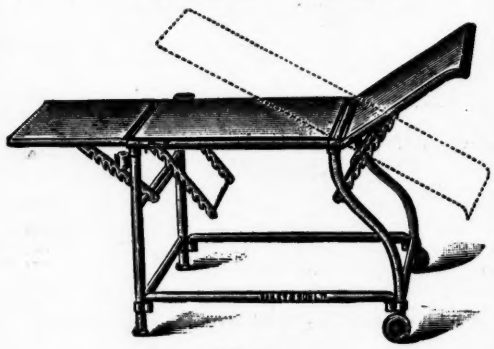

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Remarks
ON
THE INDICATIONS FOR CHOLECYSTECTOMY.

A PAPER READ BEFORE THE MANCHESTER MEDICAL SOCIETY.

BY

K. W. MONSARRAT, F.R.C.S.EDIN.,

SURGEON TO THE NORTHERN HOSPITAL, LIVERPOOL; LECTURER IN OPERATIVE SURGERY IN THE UNIVERSITY.

If we may judge by their writings, it cannot be said that the minds of surgeons are yet made up as to whether removal of the gall bladder should be the normal operation in cases of cholecystitis. I quote from two papers, both written by a surgeon of high repute, and both published in the same year. In one, speaking of cholecystostomy, he says "this operation saves this valuable organ for future function." In the other he writes: "Practically all cases of cholecystitis and 80 per cent. of cases of gall-stone disease should be treated by cholecystectomy." In a recent textbook I read: "There is much divergence of opinion on the question of cholecystostomy *versus* cholecystectomy even among the writers of this volume, some preferring cholecystectomy whenever it can be done, others limiting its use to cases in which the gall bladder is small and shrunken." Examples of the same divergence of opinion might be multiplied.

The question has to be considered from physiological, pathological and clinical standpoints. From the physiological point of view it has to be asked, what is the function and functional value of the gall bladder? It is not found universally among mammals; of the domestic mammals the solipeds, the horse tribe, are without it. The horse has a single ductus choledochus which opens into the duodenum by the way of an ampulla of Vater. The ox, the pig, the dog and the cat possess it. It is present in birds, but in them there are two or more bile ducts, the gall bladder being a diverticulum on that which leads from the right lobe to the duodenum. Physiologists are for the most part silent as to its function, but down to recent years it has been an accepted doctrine that by periodic contractions it floods the duodenum with bile when food passes from the stomach into this part of the intestine. There are difficulties in the way of accepting this theory. It has been pointed out that the amount of bile excreted in the human subject is from thirty to fifty ounces in the twenty-four hours, and that the capacity of the bladder being but one ounce it can hardly be considered a reservoir. This is true for man, who feeds habitually at four or five hour intervals, and whose duodenum contains food at corresponding intervals. Under these conditions the gall bladder can hardly have much functional value as a reservoir determining the admixture of bile with food.

In other animals, continuous feeders, the pylorus is relaxed at frequent intervals to allow the passage of food, and in them there may be a mechanism associating this passage of food into the duodenum with contractions initiated in the gall bladder. The reservoir theory is not to be lightly thrown aside because it does not appear to work in with the habits of man; if it is the true explanation of the function of the gall bladder, then in man this organ is of little value physiologically.

Mr. W. J. Mayo has adopted another theory, that the gall bladder "takes the tension from the common and hepatic ducts, and that the mucus it produces reduces the chances of pancreatic and other complications." This may be called the "safety-valve" theory. It supposes the development of an organ as a safeguard against a possible pathological condition. Such an event cannot be brought into line with any theory of the development of organs of which I am aware. An extraordinarily clumsy way this of avoiding regurgitation of bile into the pancreatic ducts when the other path, the dissociation of biliary and pancreatic ducts, was developmentally open and obtains in many vertebrata.

In the horse, which possesses no gall bladder, subacute pancreatitis has been described only as a consequence of the penetration of foreign bodies; acute pancreatitis has only once been described in the horse, three times in the dog, according to Hutyra and Marek. These figures are of course too small to reason from, but at any rate attention may be drawn to the fact that these authors are only able to put on record one case in the horse, which has no gall bladder, in which the cause may possibly have been regurgitation of bile into the pancreas, and the horse is one of the domestic animals whose morbid conditions have been most thoroughly investigated by veterinary medicine. The "safety-valve" theory practically receives its quietus when we find that in the solipeds the bile duct and the pancreatic duct are associated in an ampulla of Vater, yet there is no gall bladder, whereas in the large families of which the ox and the pig are examples a gall bladder is present, but the ductus choledochus and the ductus pancreaticus open separately into the intestine. There is no real alternative to the reservoir theory, which supposes periodic contractions associated with pyloric relaxation. The dietetic habits of man have, however, rendered this reflex of no physiological value to his digestive system.

The gall bladder is a diverticulum with a very narrow neck, the average diameter of the cystic duct is about one-eighth of an inch. It is, therefore, a diverticulum in which stagnation may readily occur. In its normal content, bile and mucus, most types of micro-organism can be cultivated, and under conditions of stagnation virulence and multiplication are increased. The source of infections in the bile channels is the portal circulation. Under conditions of health bacteria carried to the liver from the alimentary canal and other abdominal viscera are destroyed there or so attenuated as to be innocuous. Under pathological conditions this destruction or attenuation is subnormal, and infections of the bile channels may result. Infections of the urinary passages occur under analogous conditions. When infections of the bile channels occur the gall bladder is the site where they tend to persist. One result of the infection may be the formation of gall stones, but the primary condition is that of infection. Whether gall stones form and complicate the infection depends upon the relative proportions of cholesterin and bile salts. Cholesterin is a pure excretion, it is insoluble in water but soluble in solutions of bile salts; when the amount of the latter is insufficient relatively, cholesterin passes out of solution. Cholesterin is thrown off in increased quantity from tissues which are undergoing pathological changes, and concretion formation is a consequence of the rise in the relative amount of cholesterin in bile following infection.

The problem in the treatment of cholecystitis, whether associated with gall stones or not, is to arrest the infection and obviate its recurrence. For anatomical and pathological reasons it appears only remotely possible that a gall bladder that has suffered infection and inflammatory reaction can be trusted to remain quiet. We are becoming increasingly acquainted with a group of cases in which, without any gross inflammatory reaction in the gall bladder itself, the patient's health is undermined by a chronic cholangitis the nidus of which is the gall bladder, recovery from the chronic cholangitis following cholecystectomy. Some of these patients, if watched over long periods, may show an occasional transient gall-bladder distension and tenderness, but this phenomenon does not always occur. These cases do not come within the scope of this note, and I mention them only to illustrate the fact that even the structurally normal gall bladder may harbour an infection sufficient to disorganize liver function and produce chronic ill health. The chances that a bladder and cystic duct structurally damaged by inflammation can be reasonably expected to cease to harbour and engender infection would seem to be small.

The test of a successful operation for cholecystitis is whether the infection of the bile channels clears up, the liver function returns to normal, and the patient does not suffer from symptoms referable to adhesions between neighbouring viscera nor from other symptoms arising from recurrent inflammatory reaction in the operation area. My own experience is that a considerable proportion of cases of cholecystitis treated by drainage fail to pass this test. Admitted that when gall stones are associated with the cholecystitis a return of concretions is unusual when cholecystostomy is performed, a considerable number of patients so treated suffer ill health of one kind or another referable to the persistence of the gall bladder as a centre of infection—ill health due to persistent chronic cholangitis with chronic pancreatitis, recurrent attacks of pain and tenderness in the

neighbourhood of the wound, gastric distension, spasm and sometimes vomiting due to angulation of the pylorus and duodenum by adhesions.

To avoid these complications, to get rid of a potential source of recurrent infection in the biliary channels, it appears advisable to remove a gall bladder which has been attacked by cholecystitis of whatever type. The contra-indications are not local but general. In a small proportion of cases it may be advisable, in view of the patient's age or feebleness, to limit the operative procedure to the somewhat less exacting cholecystostomy after removal of calculi if present. With this exception, cholecystectomy should be the rule in acute, subacute and chronic cases. It is necessary to make certain that after its removal no obstruction will remain in hepatic and common ducts. If this is demonstrated beyond doubt, there is no need, even in cases where there is jaundice, to provide external drainage of one or other of these ducts; the indication for external drainage is an associated pancreatitis, and if this is present it is necessary to drain the common duct externally by rubber tube.

Patients who have had the gall bladder removed do not suffer any demonstrable disadvantage from its absence; in the case of calculous cholecystitis they are relieved of the double risk of the re-formation of stones and the persistence of bile duct infection; in the case of cholecystitis without calculi they are relieved of a diverticulum which would in all probability prove the source of a recrudescence of their intoxication.

An operation field which permits a proper examination of the bile ducts is adequate for cholecystectomy. The operation may present considerable difficulties when the gall bladder is shrunken and lies embedded in adhesions—it is in this condition that its removal is most necessary if recurrent attacks of infection are to be avoided. Under other circumstances its removal is simple. The raw surface left can often be obliterated by suture, or sometimes an omental graft is useful for the purpose. If this is done, and the stump of the cystic duct touched with the cautery, a clean operation field is left in which adhesions are unlikely to form. The operation is altogether a cleaner performance than cholecystostomy in which the gall bladder is opened *in situ*, and some infection of the wound is difficult to avoid. If it is true that the gall bladder is of no particular functional value in the human subject, that it is the nidus of persistent infections in the biliary channels, that its removal is not a more serious operative risk than cholecystostomy, the argument for cholecystectomy as the normal operation in cholecystitis is overwhelming.

ASTHMA AND ANAPHYLAXIS.*

BY

FRANK COKE, F.R.C.S.

THE whole subject of anaphylaxis is of very recent origin; it is also very complex. It will therefore be well to have some general description of this strange phenomenon before passing to the claim that asthma be considered as a symptom of anaphylaxis or protein poisoning, and not otherwise a separate entity.

Charles Richet,[1] in 1902, injected a dog with a dose of poison derived from the tentacles of the actiniae and with no harmful effect whatever. Twenty-two days later he reinjected the dog with exactly the same dose, expecting to reach larger doses later and a condition of prophylaxis to the poison. To his surprise, hardly had he finished the injection when the animal became extremely ill and died in thirty-five minutes. This being the exact opposite of prophylaxis, he called it anaphylaxis.

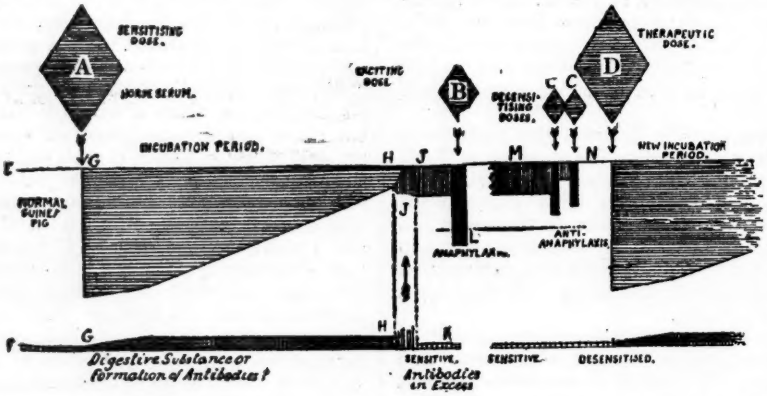
Numerous experimenters in many countries have since investigated this question; detailed accounts may be found in the books of Richet,[1] Besredka[2] and Danysz.[3]

Apart from Richet's experiments, an explanation is found for many curious facts noted previously by Hyman[4] and others, even by Magendie in 1839. It is found that any form of protein, serum, white of egg, milk, or cereal, has the power of rendering an animal sensitive to another dose of the same protein, which, when given, will instantly produce the anaphylactic syndrome—even to the point of death—in seconds. The next peculiar point is the absolutely specific nature of anaphylaxis. An animal sensitized with horse serum will not react to an injection of beef or any other serum except that from a horse. But no matter what kind of protein is used for the sensitizing and exciting dose, the anaphylaxis resulting is always the same.

The symptoms of anaphylaxis vary in the different animals. The typical picture, applicable even to man, appears as follows:

Provided a sensitizing dose has been given, and a sufficient incubation period of about ten days has elapsed, at the second or exciting dose the animal is in trouble almost before the injection is finished. It becomes restless, scratches its muzzle as if irritated; the respiration is quickened, then difficult; vomiting takes place, especially in dogs; there is diarrhoea, with the passage of blood; micturition occurs; tetanic spasms and somersaults give place to paralysis and collapse; cessation of breathing brings death. There is marked eosinophilia and other blood changes.

There is at present no complete explanation of this remarkable syndrome. A diagram will serve to visualize the whole subject and to give a rough working explanation of many of the points in connexion with anaphylaxis.



The diamonds, A, B, C C, D, represent varying quantities of antigen, horse serum, which are injected into the guinea-pig, E to F, below, such antigen being marked by horizontal lines. The body—that is, the blood and cells—is incapable of making use of this raw protein, or of eliminating it as such in the urine, nevertheless it disappears in the blood. Therefore it must undergo some change of a digestive nature inside the blood or cells. (There is no room for exceptions to rules in a short article.[5]) The lower thin line, at F, denotes the potentiality of the blood to produce this internal digestive mechanism and, may be, this is in normal working order to deal with infinitesimal quantities of undigested (by the bowel) proteins that pass through into the blood and cells from time to time or arrive there through the lungs. Under the stimulus of the protein injected (A), this mechanism (vertical lines) becomes active as it has never been before, and the protein disappears, G to H, until a time comes at the end of some ten days, H, when this digestion is finished and abruptly ceases. An excess of this digestive substance, J, then passes freely into the blood, whilst the further formation of it sinks to normal, a mere potentiality, as shown by the thin line, K.

There is certainly a moment in the diagram, about H, possibly, too, in the real anaphylaxis it is meant to portray, when there must be antigen and antibody, protein and digestive substance, present together enough to cause a small anaphylaxis. It is at this moment when the serum rashes appear. Is this possibly their explanation?

The blood then contains the antibody or the toxogenin of Richet, the sensibilisin of Besredka, the precipitin of Friedberger, or more simply (here) a digestive substance. The animal is now sensitive. A further injection, B, of antigen horse serum meeting the antibody, J, in the correct proportion, and meeting it suddenly, will immediately cause the anaphylactic syndrome to take place, the large black bar, L. It is now apparent why no anaphylaxis occurs until the incubation period is over. If more antigen is injected during the incubation period, all that will occur is that the time when sensitization

* The substance of a lecture delivered to the Tunbridge Wells Division of the British Medical Association, November 25th, 1920.

appears will be postponed until the increased quantity of horse serum has been digested. But once sensitive, the animal will remain so for years, even for the rest of its life.

Apart from the various theories of the physico-chemical or biological upset that takes place in anaphylaxis, it is certain that the central nervous system plays an important part, for under an anaesthetic anaphylaxis will not develop, the animal waking up with the crisis safely passed and with the gain of some measure of immunity or rather desensitization.

No matter what protein is used in the experiments the resulting shock and all its symptoms are always the same.

Passive anaphylaxis. If the blood of the guinea-pig which is sensitive to horse serum, about J, be injected into another guinea-pig that fresh guinea-pig at once becomes sensitive to horse serum, and a dose of horse serum injected, at once without any incubation period, will immediately cause anaphylaxis. Further than this, if the guinea-pig's blood sensitized to horse serum be withdrawn and mixed in a flask with horse serum, the anaphylactic poison, whatever it is, is formed there *in vitro*, and if now injected into a new guinea-pig the latter is seized with anaphylaxis at once.

Anti-anaphylaxis of Besredka.[2] A certain sized dose of antigen is needed, and it must be injected quickly to cause anaphylaxis. Anti-anaphylaxis is the using up of this excess of digestive substance or antibody J and M by small doses C C, when the animal will become desensitized, N, and large doses, D, can then be given with impunity.

It will thus be seen that the horse serum is used in three different ways: as a sensitizing dose A, as a lethal exciting dose B, or as a curative desensitizing dose C C. In the desensitization by antigens of human beings who are variously sensitive to these antigens, great care is necessary to make certain that the size of the dose is suitable.

Such is a brief description of anaphylaxis, and it must be clearly understood that the diagram in no way enters into the controversy of how anaphylaxis really takes place; the digestive theory may be wrong from top to bottom, but in the meantime it does give a working explanation of the experimentally observed facts.

The Clinical Side of Anaphylaxis.

True anaphylaxis in man after a second injection of protein is rare, but many cases are on record.

A practitioner in India[1] gave himself a dose of antiplague serum, and in a year's time gave himself another. He was instantly seized with fainting fits, coma and asphyxia, and died in a few hours. With the frequency with which serums are now given more of such accidents may be expected. They may be avoided by small preliminary injections, C C, the anti-anaphylaxis of Besredka, by giving the injection very slowly,[6] a special syringe—the Woodyatt pump—having been devised for this purpose, and by noting any sensitiveness by the skin reactions, as detailed below. If actually developed, anaphylactic shock may be treated by anaesthetizing the patient, whilst adrenalin or epinephrin will probably keep minor manifestations in abeyance.

ASTHMA AND ANAPHYLAXIS.

Apart from these very rare cases, there are a large number of complaints which have greater or lesser claims to be considered as anaphylactic symptoms of protein poisoning, and no longer as separate diseases. Chief amongst these is asthma. The case for asthma will be given very fully, and at various points of the argument other complaints that seem to come under the same headings will be noted. Anaphylaxis results from sensitization to foreign proteins. Half the cases of asthma can be proved to be due to sensitization by foreign proteins. In Allbutt's *System of Medicine*, asthma and hay fever are considered together in the same article. Hay fever is due to sensitiveness to pollen, not as a mechanical irritant, but from its protein content. An attack of hay fever can be excited in a susceptible patient by an injection of the pollen protein hypodermically and in mid-winter.[7]

Now the sensitiveness to the pollen can be tested for by placing pollen in the conjunctival sac. Test sets for the timothy grass are supplied from St. Mary's Hospital laboratories, where much of the work that led up to the American investigation was performed. Later, this method was transferred to a scratch on the skin, when an urticarial wheal can be produced. Further, it had long been noticed that some cases of asthma were undoubtedly due to the presence of animals—for instance, cats and horses. The next step was to see if a skin reaction could be obtained by the proteins of horse dandruff or cat hair, and the hundred and one other proteins with which we come in daily contact. To cut a long story short, this method has proved eminently satisfactory and feasible, and by its means the cause of 50 per cent. of asthmatics can be determined,[8] Dr. Freeman being the first to lecture on this subject in England.

Technique of the Skin Reaction.

The inside of the arm and forearm are cleaned, and a scratch ½ in. long made with a scalpel, not going deep enough to draw blood. On to this the protein and solvent are placed. The tests should be an inch and a half apart. On the two arms a number of tests can be made at a sitting, though sometimes it will take three or even four hours to complete a test. A positive reaction consists of an urticarial wheal not less than ¼ in. across. This appears in from ten minutes to half an hour. Sometimes they are as large as a halfpenny with irregular branches coming out of them.

These reactions vary enormously in different people, so much so that some experience is necessary to judge the degree of reaction present. The proteins I use fall into four main groups: Some 70 foods, 20 bacterial proteins, 10 kinds of animal hair, and 10 pollens; also various face powders, etc. A full testing may take four sessions of an hour each.

Very rarely the history is clear enough to enable one to mark the offending protein with the first test, but much time is saved in the long run by a complete examination.

For instance, one patient could only give me a very short time. He was very sensitive to hen feathers. He gave up his feather pillows and feather bed, and his two eiderdowns, which he always used for warding off a chill and the asthma at night! Much of his asthma went, but not all. Further testing showed him sensitive to rice and beans, the rice undoubtedly being responsible for his last attack. He is now clear of asthma.

Multiple reactions are very common, as the following case will show.

A child 5 years old, with a strong family history of asthma; eczema and urticaria always; asthma continuously day and night for one year. The skin reactions were banana, cabbage, eggs, and rhubarb ++++; barley, beans, rye, and oats +++; beetroot, carrot, chicken, lentil, orange, potato, wheat, and rabbit fur ++; articles to which he was not sensitive were apples, beef, Bird's custard powder, Colman's cornflour, cocoa, codfish, coffee, haddock, herring, milk, lettuce, pear, pork, rusks, rice, lamb, tapioca, veal, horse dandruff, and hen feathers. On a diet chosen from articles to which he did not respond this boy has had no asthma since the first day he came to see me. It surprised me that he should be sensitive to cabbage, but I find that is quite a common thing to be sensitive to. His mother was perfectly certain that fish upset him, I was equally certain that it did not; he now takes large quantities of it. This child had been seen by many eminent medical men in London and Edinburgh both for his asthma and his eczema, but without the skin tests it is difficult to see how a correct dietary could ever have been drawn up.

An explanation is now given to the extraordinary likes and dislikes of these asthmatics in their food, their personal surroundings, and their locality.

A girl, aged 9, had asthma continuously for six years except for a break of eleven months whilst at Exmouth. She came back to London and the asthma recommenced at once, so she went back to Exmouth. There she had asthma this second time, rather worse than she had ever had it anywhere before. This is quite a common kind of history. I was asked to test her in St. George's. She gave horse +++++; dog ++; cat +++. Her "animal history" was that she had always had a cat at home but none at Exmouth the first time. The second time she visited Exmouth there was a cat and a dog there which she played with all the time. She had then been in hospital six weeks with no asthma. She was given the hospital cat to nurse from 5 to 6 p.m. At 1 a.m. she woke up with a typically bad attack of asthma. This explains why so few have asthma in hospital; they leave the article they are sensitive to at home.

One more case. I found a girl very sensitive to dog hair and to nothing else. She got rid of the dog and her asthma went. Some months afterwards she went to the sea and had bad asthma the first night. In the old days she would have stopped there and had asthma for a few days, and then gone home because the "sea air" did not suit her. Having great faith, however, she made inquiries, and found that the people who had left that morning had four dogs, and all four had slept on the rug which covered her bed.

The absolutely specific nature of anaphylaxis is well copied by these asthmatics. Now 50 per cent. of all asthmatics and some 90 per cent. of asthmatic children give reactions. One of the most interesting reactions is that given to human hair, several married patients who are sensitive to it being convinced that they are best when sleeping apart from their husband or wife, as the case may be. It is undoubtedly "foreign"—that is, different from

the blood serum. Hen feathers, chicken meat and eggs, even the white and the yolk, are all different as proteins, and I have had patients sent to me who are only sensitive to one of these.

The following case illustrating passive anaphylaxis, published by Ramirez,[9] is of great interest:

A man was transfused with 600 c.cm. of blood from a donor, with no immediate discomfort. A fortnight later, on going out for a drive, he was seized with violent asthma, never having had such a thing previously. It was found that the donor he was transfused from was an admitted horse asthmatic, sensitive to 1 in 50,000 horse dandruff protein. His sensitive blood at J in the diagram had been transferred to this new man and had sensitized him—to wit, a skin reaction to 1 in 20,000 of the protein.

No less interesting is the fact that another man who received even more blood from this same donor did not develop asthma. What was there in his blood that had avoided sensitization? Or was he sensitized but did not show it by asthma? Their blood groupings are not stated, but presumably they were the same.

Certain individuals are sensitive to other things than proteins.

I examined a patient who gets asthma at once on taking half a grain of aspirin. Another was recently unconscious for ten hours in an asthmatic seizure after being given a kindly night-cap of 5 grains of aspirin. In other people aspirin, quinine, and iodoform or antipyrin[11 12] give rise to a profuse urticaria. If the serum of these people be injected into animals, the animals become sensitized to the drug. They become extremely ill when these drugs are then administered to them, whereas the controls give no symptoms. Pagniez[10] states that, serum from asthmatics having been injected into guinea-pigs, asthmatical attacks can be produced in them by injecting them with a solution of the Charcot-Leyden crystals, which the French consider to be made of tyrosin.

These asthmatics show many other idiosyncrasies to food and other proteins quite comparable to the other symptoms of anaphylaxis. It appears that, given the entry of a foreign protein, it is a matter of luck or predisposition what symptoms are called forth.

The connexion between asthma, hay fever, and paroxysmal sneezing is well known. Any of them may be due to pollens, animals' hair or the dust of tea or flour. They simulate the nasal irritation of anaphylaxis. Sometimes a simple hoarseness takes the place of both. Vomiting is common.

One child, who is only sensitive to rabbit fur, vomits, as the father says, at the sight of a bowl of rabbit broth. Another patient, who reacts to a solution of 1 in 10,000 of white of egg, is sick even with the glazing on the top of a bun or with a spoonful of soup cleared with white of egg, an inconvenience that overtakes him in a few seconds. Another patient, who has not taken honey for thirty years because it makes him sick instantly, in spite of this interval still gives a +++ reaction to honey. Those patients who are sensitive to animal hairs must avoid circuses and the Zoo. I had a patient who had to be actually carried out of the monkey house. Another who went to a performance of the "Garden of Allah" only saw the first act.

Eczemas and urticarias are very common with asthma, but even alone they give much the same proportion of skin reactions[13] and are, in fact, merely symptoms from the same protein cause. The ragweed pollen may cause eczema without any asthma or hay fever.[14] A patient who gives a reaction to one member of a group will very often be sensitive to other members of the same group—that is, the hairs, cereals or legumens—probably because they contain some of the same proteins as those in the article tested. Epilepsy is common with asthma and migraines, and is also in the same category.

While the Americans have devoted their energies to the skin tests, the French go to prove all these complaints as anaphylactic by various blood changes.

Widal, Abrami,[15] and their collaborators have discovered a "crise hémoclasique," as they term it, which takes place in anaphylactic shock, in protein shock, and also in asthma, urticaria, migraine, and epilepsy, in paroxysmal haemoglobinuria, in malaria and other parasitic complaints when large quantities of protein are thrown suddenly into the blood stream, and also in those absorbing proteins from their own wounds; as a side issue on this, the rapid removal of tourniquets, massage, and squeezing of the limb with bandages is contraindicated even in civilian practice.

The "hémoclasique crise initiale" consists of a fall in blood pressure, a leucopenia, the leucocyte count falling from 12,000 to 4,000 or even less, and many other less easily observed changes in the coagulability of the blood, its refractive index, the colour and substance of its clot.

The "marchand de mouton"[22] had dealt in sheep for nearly forty years, during the last three of which he had become so sensitive to the smell of sheep that he had to give up his trade. In hospital he, of course, had no asthma. For the experiment he entered a pen of sheep. His leucocyte count and blood pressure were taken every few minutes. After two hours both fell, the leucocyte from 12,000 to 6,000. They then rapidly returned to the normal. During this time he felt no difference in himself. At the end of three and a half hours, when the crisis was completely over, he developed a very bad attack of asthma.

Another man had migraine, especially after chocolate,[21] but only at times. He had chocolate each morning in large quantities, followed each time by a normal digestive leucocytosis, until there came a morning when the blood pressure and leucocyte count both dropped. Shortly after this gastric disturbances and a bad attack of migraine came on.

In all cases the blood crisis passes without any knowledge of inconvenience to the patient, but, having passed, the asthma or migraine at once develops. With certain cases of paroxysmal haemoglobinuria all that is necessary to initiate the paroxysm is to place the patient's hands in a bowl of very cold water. The blood crisis follows at once, and later the haemoglobin appears in the urine.[16] But because these blood changes are present in this variety of conditions and after the injections of proteins into the blood, it does not, of course, necessarily mean that they must all be true anaphylaxis. Besredka[2] says that naturally intravenous injection of large quantities of foreign protein, or what not, will give rise to a shock, but he refuses to call these various intravenous protein shocks anaphylactic, unless the same shock is caused when the substance is injected intrathecally.

Cowie and Colhoun,[16] in their article on the blood changes in connexion with the non-specific protein therapy by means of injections of antityphoid vaccine, note this same initial leucopenia, etc., of the "crise hémoclasique" but differentiate this protein shock from that of anaphylaxis by the absence of an eosinophilia. This increase of the coarsely granular cells staining with eosin is always present in anaphylaxis. Of other complaints in which it is noted in man, the asthmatical attack is the one of all others in which it is most extensively found. The sputum may be packed with them, in the blood they may be half the number of white cells present. Eosinophilia may, then, be another link to bind these anaphylactoid conditions together. Moschcowitz[17] notes that it is present in the subjects of asthma and hay fever, and in their secretions, in the urticarial wheals and bullae of a great many skin diseases, in mucous colitis, in pellagra, and after an injection of tuberculin, in tetany, hemicrania and epilepsy. It is also a point of great diagnostic value in intestinal parasites. Note the common occurrence of epilepsy, urticaria, even asthma, with worms—that is, an absorption of foreign protein?

Now what of the 50 per cent. of cases in which we do not get a reaction? One is surprised to find how little interest is taken in those cases by the Americans. The type of asthma, excluding the cardiac or renal air hungers, is exactly the same as those in which we get reactions. Probably the fault lies in our not having a sufficient list of proteins to try them with. There are many different proteins in a grain of wheat. I have six in my tests. Also think of the number of protein derivatives there are in the digestion of foods, the scores of microbes inhabiting the bowel, the hundreds of non-pathogenic organisms, many unnamed and unknown to us, but each with its specific protein to which we may be sensitive. There is also the question of a period of desensitization after attacks to be considered.

Chronic Anaphylaxis.

Danysz, the French bacteriologist, has recently published a book which is creating considerable excitement amongst the few who have read his work on *Maladies Chroniques*.

He attributes to sensitization to intestinal microbes or other proteins, not only the attacks and exacerbations of chronic complaints from frequent anaphylactic upheavals, but states that the actual presence of antibody or our "digestive substance" in excess is the cause of most chronic complaints. Fresh antigen may then precipitate big attacks of asthma, urticaria, and so forth, or may by smaller doses cause such complaints as psoriasis, eczema, neurasthenic and menstrual disorders or stomachic upsets.

It is necessary always to bear in mind the double poisoning of microbes and other substances, one in virtue of their toxins, the other in anaphylactic response to their protein content.

The following experimental work backs up Danysz's claim:

Rabbits are given doses of horse serum daily for two or three months with no ill effect. In this way a maximum quantity of the digestive substance is formed. Now if the animals be left for three months without any injections it is found that some will have paralysis, others skin troubles with alopecia, others arthritis, in fact at the end of a year they will nearly all be dead. They waste and in every way copy the chronic complaints that man is heir to.

How do Asthmatics become Sensitive?

In many there is a strong family history, not to the actual protein but to asthma and like diseases. A horse asthmatic father may have one child with hay fever, another with asthma and sensitive to potatoes and hen feathers. There is often a history of fever or inflammation of mucous membranes which has allowed the sensitizing protein to pass through.

Schloss's boy[19] had albumen water for diarrhoea when only a few days old, when egg albumen can pass through the intestinal mucous membrane; this was his sensitizing dose. He next had his first spoonful of egg, the exciting dose, at fourteen months, and it nearly killed him.

The long-continued presence of a protein may make people sensitive to it. I have a patient who has been a baker for twenty years; he is now an asthmatic, very sensitive to wheat and oats.

We will now go over a case of asthma in the light of this new work.

More important than the age is the age of onset. The younger the patient the more simple the cause, the freer from bronchitis and bacterial infections or sensitizations. Ninety per cent. of children give reactions. But no matter what age the patient may be, the chance of finding the cause by the skin reactions increases in proportion to his youthfulness at his first attack. Patients 60 years of age will give reactions if they started their asthma in childhood; whereas in those commencing after 40 very few give reactions except clear cases of occupational sensitization, as the butcher and the baker. The chief points in the history are to know if the complaint is continuous or arises only at certain times of the year or in certain places. If the asthma is constant, have there ever been times when the patient has been free—on a sea voyage, for instance?

The family history merely denotes the predisposition and will not help us to the protein at fault. The pre-natal history will not help either, but is intensely interesting. Like everything else in asthma, it is completely paradoxical.

One patient's mother had seven children. Her husband was a horse asthmatic. With one child, a boy, she had eczema all the time she was pregnant; that boy is a horse and dog asthmatic, all the rest of the children being normal. Another lady has had asthma ever since she was married, very badly and always, excepting for nine months when she was pregnant. The child, a boy, is healthy. I have had a similar history with a migraine patient. Another lady had only had hay fever twice in her life, on both occasions during the whole summer that she was pregnant. One of her sons is a horse asthmatic, the other has bad hay fever. Another patient, sensitive to milk, had to have chloroform and morphine every day and night during her two pregnancies. She did not nurse either child. One child was very ill for the first six weeks with gastric troubles after milk; the other, on milk also, died from asthma at 6 weeks of age. This was probably true transmission of sensitiveness to the offspring, as can be produced experimentally in animals. It soon passes off, as it did in the first child.

A history must be made of any distastes for special foods, of the animals present in the house, of microbic diseases, or of the effect, as known, of pollens. Next to the skin reactions, histories of treatment are interesting when seen in bulk. Every article that can be a cause of the asthma must be tested for. Too much reliance must not be placed on the history. One child was very ill in the country during the haymaking season, but better at the seaside. He was not sensitive to pollens, but to oats, etc. He had much oatmeal in the country, and none at the seaside. A complete physical examination must be made; one must not miss tuberculosis even if the reactions give the cause of the asthma.

There is often a history of colds that are said to cause the asthma. More often than not the sneezing and the catarrh is true asthma; certainly, in children, the asthma is often preceded by a year or more of colds and bronchitis. Exercise and dust will often bring on an attack, but they are not the cause. If one finds the cause, the mother will write to say: "It is so nice to see little Tommy running about with the other children and not getting asthma." If the cause can be discovered and it is one that can be removed, the patient will lose the asthma from that moment. Conversely, if the asthma does not go, the cause or all the causes have not been discovered.

There is not space to discuss, nor do we know, the actual mechanism whereby these various proteins act, but there would seem to be two types of patients—those whose mucous membranes respond as quickly as do skin reactions, a matter of minutes, and others whose attack comes some hours after meeting the protein to which they are sensitive, as in my cat case and in the "marchand de mouton." Lastly we must not forget the remarkable part played by the nose in asthma. Occasionally the nasal surgeon will cure patients for varying lengths of time by simply cauterizing the nasal mucous membrane.

Whether the smell of animals actually contains protein which enters with the breath, or whether some central nervous mechanism is set in motion directly through the olfactory nerve is still a matter for investigation. Very little work has been done in connexion with the sense of smell, but the mechanism is extraordinarily sensitive. Now, normal people in the presence of a horse must breathe in just as much of the smell or protein of the horse as these asthmatics. Is it simply that their blood is not sensitive to the horse protein? Or is the protein stopped at the mucous membrane of normal persons? Or does it get through, but is summarily dealt with in normal persons? Again, can this possibly have any bearing on the facies that stamps the ostler and the groom so unmistakably?

Starting with one drop of a 1 in 100,000 solution, I have produced a bad attack of asthma by reaching an overdose at 5 minims of a 1 in 10,000 solution. If the patient is sensitive to articles which cannot be avoided, that is, chiefly horse-hair or pollen, he can be desensitized to either by gradually increasing but very small doses, always controlled by skin reactions. Another treatment is that by the intravenous administration of peptone,[20] on the idea that all these proteins are broken up into peptones during digestion, and therefore the one peptone may, so to speak, catch them all at a lower level than the specific proteins. The third method is also a method of anti-anaphylaxis, but instead of using small doses of peptone, as antigen, mixtures of microbes from the ordinary intestinal flora are used hypodermically. This is the method of Danysz. He uses autogenous and heterogenous cultures of all the intestinal microbes that will grow on a sloped gelatine or peptone culture. They are used as antigens, not for any toxins they contain, but simply for their protein contents.

By these various methods most cases can be improved, some made gloriously well. The delicate child cooped up in a stuffy nursery each winter with the cat, the dog, or the feather bed that is causing all the trouble, becomes normal straight away. It is impossible to tell which case will give reactions, or which will improve under any particular method of treatment. The method of Danysz must be used with very careful dosage or big attacks of asthma may come on, the patient even being made worse for a time.

With regard to the treatment of disorders allied to asthma, still scantier claims must be made because of the small number of cases coming under any particular heading. The following case is of interest:

A gentleman, at one time a fine athlete, has suffered from neurasthenia and gastric disturbances since the war, feeling blown out after his meals, and in a condition that might well be called hypochondriacal. On testing he is found to be very sensitive to potatoes. Removing these from his diet has made him a different man.

The treatment of Danysz in some cases does give the extraordinary results claimed for it, especially in chronic eczema and other skin diseases. I am, however, convinced that we have yet much to learn in the dosage of these entero-antigens.

If we look back at our diagram and see that the size of the dose alone decides whether it shall be a sensitizing dose,

an exciting dose, or a curative dose, we may well be puzzled in finding the correct dose in a sensitive patient.

Summary.

1. By the skin reactions half the cases of asthma can be proved to be due to some foreign protein.
2. If these causes can then be removed the patients are relieved of their asthma at once.
3. Much can be done to relieve or even cure other cases which do not give positive skin reactions, by the usage of various proteins, as antigens, to desensitize them with.
4. Asthma, hay fever, urticaria, eczema, migraines, epilepsy, and paroxysmal haemoglobinuria, have many common traits and will probably all be proved eventually to be symptoms of anaphylaxis and not separate diseases at all. This list will most likely be considerably enlarged.

In conclusion I wish to thank those many gentlemen whose patients I have tested and treated, but especially my friend Dr. Latham, through whose interest my attention and work have been so fully turned to this matter.

This new advance in medicine may be only a matter of inches, but it does allow us to see round a fresh corner and to obtain a view, and a direct view, of great possibilities in connexion with these chronic complaints, the cause and cure of which have so long baffled explanation.

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CHRONIC RETENTION OF URINE ARISING FROM PROSTATIC DISORDER:

ITS CAUSE, AND TREATMENT BY THE PRACTITIONER WITHOUT OPERATION.

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CHRONIC retention of urine is most commonly produced by some disorder of the prostate gland, and among these troubles enlargement is that most frequently met with. Retention therefrom was generally attributed to a pure mechanical cause, that is, the urethra was blocked or plugged by the intervention of a mass of abnormal gland tissue, which was thrust into the orifice during micturition, thus preventing the escape of urine. Many mechanical theories, based on this principle, have been advanced. At one time it was a large middle lobe which dropped into the orifice like a ball valve. At another it was side-flaps springing from the neck, which met together in the middle line like flood-gates. At a third it was the regular enlargement of the glands round the orifice which prolonged the urethra as a solid projection into the vesical cavity and prevented the escape of fluid, much as an excise-man's inkstand does when upset. And finally, the post-prostatic bar was accused of causing the mischief, for it was said that the bar came forward over the outlet during vesical contraction and effectually blocked it, while at the same time the pressure produced a deep pocket or pouch behind the prostate. None of these explanations appear to be entirely satisfactory. For their supposed action is not supported by the facts disclosed during the use of a catheter; neither do they account for many of the symptoms frequently met with; and finally, the removal of the irregularities—valves, flaps, nipples, bars, etc.—does not invariably restore the lost function. The whole prostatic tissue must be enucleated to ensure success. It would seem, therefore, that although mechanical obstruction may assist, it is not the principal cause of retention.

Before giving yet another explanation, on a different line, a brief sketch of the various pressures existing in the bladder and urethra is necessary to make the argument clear.

Urine within the bladder, when the organ is quiescent, is always subjected to pressure—namely, that due to the force exerted by muscle tone, and to that of the weight of the viscera above. For convenience these two forces are considered as one, and may be termed "tonal bladder pressure." It is found that this tonal pressure increases as the bladder fills—thus, for instance, when empty the pressure may register 15 mm. of mercury, but when holding 10 ounces of urine it may have risen to 30 mm.

The escape of urine is prevented by the resistance the prostatic urethra offers to dilatation. The channel is always tightly closed, and is only open when the pressure on the urine in the bladder exceeds its power of resistance. It therefore follows that as urine does not escape until the act of micturition—that is to say, not until a muscular contraction is evoked—this prostatic resistance must always be greater than the maximum tonal pressure, and if the latter is known by experiment, then the pressure of prostatic resistance must be in excess of that figure. The resistance throughout the length of the prostatic urethra is not equally distributed: it is least at the commencement and increases gradually towards the apex of the gland, where it is the greatest. The total resistance of the whole passage may be said very roughly to be between 40 and 50 mm. of Hg, and it is possible that its maximum is attained with an empty bladder, decreasing slightly as the organ is distended.

When the rise of the tonal pressure, due to the gradual filling of the bladder, approaches that exercised by the prostatic resistance, urine begins to make its way into the first part of the prostatic urethra, which then becomes an integral part of the bladder. As the invasion advances the reflex centre controlling the muscular power of the bladder is stimulated, and the desire to micturate is induced. Should the call be inconvenient, extra resistance is immediately imposed on the urethra by the contracture of the various bands of voluntary muscle distributed around the passage and also by the compressor urethrae muscle. The augmented opposition to the pressure in the bladder, and possibly the expulsion of the urine which has invaded the passage, checks the escape, and the slight wave of contraction which has swept over the bladder wall slowly dies away and with it the desire to micturate. If, on the other hand, the call is complied with, the muscular bladder wall is thrown into contraction, the prostatic resistance is overcome and the urine issues in a steady stream. During the act the voluntary muscles, if desired, may be called into play, so that more resistance is interposed; the stream then lessens, and finally stops, and urine is voluntarily left behind in the bladder. The muscular expulsive power of the bladder is found to behave similarly to that of the tonal pressure, for it is strongest when the bladder is full, and falls as it empties, but it differs in that it ceases directly evacuation is complete. The expulsive force, for instance, with 10 oz. of urine in the bladder may record 180 mm. of Hg pressure, but with 5 oz. it has fallen to 50 mm. or less, and with an empty organ there is none, only that of the tonal pressure of 15 mm. being registered. Further, under normal conditions the whole power the vesical muscle is capable of developing is not invariably called forth, the amount generated being tempered to the work that has to be accomplished, and normally there is always a good margin of reserve power.

The act of micturition is therefore effected, first, by the steady rise of the tonal pressure as the bladder fills, which gradually forces urine into a portion of the prostatic urethra, there stimulating the area governing the bladder muscles; secondly, by the contraction of this bladder muscle, which develops sufficient power to overcome the prostatic resistance.

Normally the two forces—bladder expulsive power and prostatic resistance—are so balanced that they allow of the complete evacuation of the bladder and nothing more. If, however, the balance is disturbed, as is frequently the case in disease, disorder of the act of micturition must follow. Thus, if the prostatic resistance is increased, the expulsive power remaining the same, then a point will be reached during evacuation and before the bladder is empty

at which no more urine can be thrown out, and residual urine is the result.

Again, it is obvious that if the resistance exceeds or is equal to the maximum expulsive power the bladder is capable of exerting, total retention will follow and no urine can be passed naturally. On the other hand, if the resistance is diminished below the normal, then the bladder capacity will be smaller, and the patient will pass urine more frequently but in smaller quantities.

That prostatic resistance is generally augmented by enlargement is amply proved, not only by clinical investigation of the canal and by the fact that removal of the whole tissue restores the lost power, but also by the anatomical and pathological features the gland presents. The prostate is surrounded laterally and below by a very strong fascial capsule. This space is filled with simple and compound racemose glands lying in a groundwork composed of elastic, fibrous, and muscular tissue. Any glandular growth will tend therefore to advance along the line of least resistance—namely, towards the lumen of the bladder, but at the same time will press upon the urethra, which pierces the mass centrally, and will consequently offer increased resistance to any dilatation.

For the foregoing reasons it is contended that retention from prostatic disorder is mainly caused by increased prostatic resistance, and not so much by mechanical blocking as was formerly suggested.

Treatment of Retention caused by Increased Prostatic Resistance.

The tendency at present is to operate on all cases in which retention has declared itself, and to operate early before any routine treatment has been tried. For it is urged (1) that the disease is progressive and cannot be arrested; (2) that the kidneys are subject to back-pressure, which ultimately produces renal inefficiency and degeneration; (3) that the habitual use of the catheter invariably leads to sepsis, with local and general complications.

In reply to these arguments, it may be said that although the prostatic tissue may continue to grow, it does not follow that the resistance increases in the same proportion, and if it does, the resistance may be combated by a corresponding development of the bladder expulsive power (compensation); that there never can be any back-pressure if the catheter is properly and systematically used; and that the occurrence of sepsis is nothing more than the frank acknowledgement of a breakdown in the technique adopted with regard to the preparation and passing of the catheter.

In dealing with prostatic retention it would seem advisable first, if possible, to effect a cure, or an amelioration of the symptoms by treatment, and afterwards should this course fail or catheter life be too great a tax on the patient, then to resort to operation. The time lost will have no bad effect, in fact very often the reverse, and perhaps happily the patient may then escape the trouble of a severe ordeal.

The treatment of retention due to increased prostatic resistance should be directed to two main objects: first, to reduce that resistance, and secondly, to increase the expulsive power of the bladder.

No marked success, as a general rule, attends the treatment of the prostate alone, except in a limited number of cases, where the trouble arises either from congestion, possibly brought about by straining during the too frequent act of micturition, or from the pent up glandular secretion owing to the blocking of the slender prostatic ducts by débris or small calculi. Improvement may then be attained by appropriate massage applied directly to the prostate itself, the fluids are dispersed or expressed, slight shrinkage of the prostate follows, with a corresponding alleviation of the symptom. More, however, may be expected from a combination of this with treatment undertaken to restore or increase the muscular expulsive power. The procedure may be illustrated by describing a typical case. A patient complains of obvious and definite symptoms of prostatic enlargement accompanied by chronic retention. The urine is clear and healthy, and the prostate on rectal examination is found to be full and elastic. On introducing a catheter, immediately after he has passed all he can by his own efforts, 10 oz. of urine are withdrawn. The effect produced by the constant presence of this amount of fluid in the bladder is similar to that of a limb subjected to continuous weight extension. It relaxes and loses its power; the loss and exhaustion in the bladder is accentuated by its struggle to expel a fluid against a resistance it cannot overcome. The amount of residual urine, if allowed to remain, tends to increase independently of any further increase in the prostatic resistance. It is evident, if any amelioration of the condition is to be effected, that the bladder must be artificially relieved of its load, and the catheter should be used certainly twice, if not three times, in twenty four hours at regular intervals.

Under this treatment the symptoms disappear, and in the course of a few days the average residual urine falls from 10 to 7 or 8 ounces, but the quantity then remains stationary. The catheter has thus far restored some of the expulsive force, but will do nothing more, probably the reverse in the future, unless it is aided by some other means. For the urine is expressed from the bladder during catheterization only by the tonal pressure, and not by any muscular contraction. The muscle during the emptying remains idle, never being called upon to exert itself, and with such inaction, or with only passive movement, it soon begins to lose its power and become inoperative. To counter this defect, and to cope with the increased prostatic resistance, it is necessary not only to maintain the existing power by exercise, but also to develop muscle strength—that is, to produce compensation by hypertrophy. The line of treatment indicated is to induce the desire to micturate while the catheter is *in situ*. The urine is then expelled in a more rapid stream through the catheter, and probably at its side through the urethra, by the gentle muscular contraction, and not by tonal pressure alone, and thus the muscle is efficiently exercised.

This treatment must be repeated regularly and for a considerable period; the residual urine will gradually diminish, from 8 to 5 and from 5 to 2 ounces, and in quite successful cases total natural evacuation will result. There are, however, one or two details to which attention must be paid. In the first place it is not always easy to induce muscular contraction while the catheter is being used. The patient feels "no desire," and cannot evoke it. The best plan then is to pass the instrument when the bladder is full—that is, when it contains not only the residual urine, but also the amount he is able to void naturally. The desire then becomes almost spontaneous. Again, as the muscle grows in strength, more and more work must be imposed upon it, though it should never be overtaxed or exhausted. A catheter of a smaller internal bore than the original should be substituted, or the catheter should be drawn slightly into the prostatic urethra and the eye partly blocked. In both cases increase of flow of urine by the side of the catheter will follow. It is found, moreover, that a catheter, or "continuous" tube, is not absolutely essential to withdraw the residual urine when muscular contraction is induced; a solid instrument (a No. 6 or 7, especially if grooved on its surface) traversing the prostatic urethra will suffice, for it separates the passage walls and leaves a chink above and below it through which the urine will escape during vesical contraction.

Conclusions.

The objects, therefore, of instrumental treatment of a case of retention from prostatic enlargement are:

1. To preserve intact the activity of the existing muscle by exercise.
2. To prevent the exhaustion which must necessarily follow an ineffectual struggle, by the use of the catheter.
3. To artificially reduce the prostatic resistance while the patient is under treatment so that the bladder may be emptied by muscular contraction.
4. To develop the muscle by gradually increasing its work as it gains strength, so that ultimately the expulsive bladder power may be able to deal with the increased prostatic resistance without the aid of artificial means.

The success or failure of the treatment, however, must largely depend on the maintenance of the urine in a condition of sterility. Too much stress cannot be laid on this point. Nothing short of boiling both instrument and lubricant is of any avail. Chemical antiseptics are useless; but with this precaution, coupled with manual dexterity, an aseptic state may be maintained for an indefinite period.

RENAL DECAPSULATION FOR CHRONIC PARENCHYMATOUS NEPHRITIS.*

BY

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In the early years of the present century this subject was "in the air," as a result of the writings of Edebohls of New York. At that time I was able to observe the results of stripping the capsule of the kidney in several cases of chronic nephritis. For some reason or other the results were not promising, and when one came to consider Edebohls's book, many of the cases quoted in the book did not appear to fit in with the conception of chronic nephritis as usually understood in England. At that time, therefore, I came to the conclusion that there was very little promise in stripping the kidneys for chronic nephritis.

In 1916 I had my attention called to this subject by the fact that I was called in to see the children of two doctors suffering from chronic nephritis. The doctors urged me to strip the kidneys. Not having had favourable experience of this measure I could not accede to this request, but I began to look up the recent literature again, and noted that favourable cases had been reported from time to time. I asked some of my medical colleagues to allow me to try the operation once more upon patients at the London Hospital. As a result, Dr. Lewis Smith and Dr. Hadley sent me the first case I report below. He had been ill for a very long time, was completely waterlogged, and medical treatment seemed to offer him no further hope. Soon after the operation I went away in the army and lost sight of the patient. He turned up in 1919 quite restored to health and able to do a full day's work.

I was so impressed with this that I asked Dr. Hadley to send me some more cases; the last three I report below. The results were that one appears already to be well, another improved for a time but relapsed, and shortly afterwards died of tuberculosis of the lungs and uraemia. The fourth lost all his signs and symptoms for a short time, but has since relapsed.

I think these results, taken in conjunction with Sir Thomas Horder's cases, justify an appeal to the profession to reconsider this subject, as it is clear that some cases of chronic nephritis are greatly benefited and may even be cured by the comparatively harmless process of stripping the capsules of both kidneys.

When we have a sufficient number of cases for review I think we shall be able to pick out a type case in which the result is likely to be beneficial. At present it does not seem possible to state which case the operation is going to benefit and which not. Sir Thomas Horder suggests that it is the case without cardio-vascular change that will benefit from the operation, but I do not yet feel convinced of that. Two of my patients had a high blood pressure and two a low blood pressure, and yet the result was quite good in one of the patients with high blood pressure. Of course, in this case, the raised blood pressure may only have been a temporary phenomenon, and it may be that no permanent changes had taken place in the heart or in the blood vessels. Still, I feel that there is something more we have got to find out to enable us to distinguish the type of case suitable for the operation. One favourable case had polyuria, and one had oliguria.

EFFECT OF DECAPSULATION.

How does stripping the capsule have a beneficial action? I cannot believe that it has anything to do with the relief of tension, because when one strips the capsule in these cases the kidney does not seem to be under any tension—that is to say, it does not expand; nor does the capsule appear to be capable of a great resistance to tension. We know how easily the capsule can stretch in cases of acute pyelonephritis. In such cases the kidney will suddenly swell up to two or three times its normal size, and return to the normal size again in a fortnight or less, so that the capsule must be easily distensible. I do not think it can be due to a permanent increase in the blood supply of the kidney, because the favourable changes seem to appear within a few hours, or at most within a few days.

Personally I believe that by removing the capsule of the kidney we unblock the lymphatics and set up another route for the lymph to flow out of the kidney. The lymphatics of the kidney run up from the ureter under the capsule through the kidney, where they receive the lymph of the kidney substance, and then to the glands in the vascular pedicle of the kidney. The capsule seems to act as a membrane to shut off lymph from the perinephric fatty tissue. Possibly in these cases of chronic nephritis the lymphatics become blocked either by excess of lymph or by fibrinous deposit, and the nephritic poison cannot be drained away from the kidney substance. I have noticed that directly after stripping off the capsule of these kidneys, clear lymph seems to flow out from the kidney sponge almost at once—the kidney seems to ooze lymph. This lymph may then be picked up by the tissue spaces of the perinephric fat and be absorbed by another route.

Technique of Operation.

As regards the details of the operation, I always operate on the kidney with the patient in the face-down position, as recommended by Edebohls. In this position the patient breathes much better, and it is possible to expose both kidneys without moving the patient. There is no need whatever to bring the kidneys up to the surface; I simply cut down to the surface of the kidney, make a snick in the capsule and strip it off with the fingers, and leave it all bunched together round the hilum. I put in a tube for twenty-four hours. In this way I did both kidneys in twenty-three minutes in one patient and twenty-two minutes in another patient. I think it is of advantage to operate as quickly as possible, as one does not want to expose the patient for a long period to an additional kidney poison, such as ether or chloroform. One of the patients was so dyspnoeic that he could not lie down at all. The anaesthetic was administered sitting up, and when he was "under" he was placed in the face-down position and we found his breathing was good enough to proceed. The same evening the patient could lie down in bed and within a few days his dyspnoea had entirely disappeared.

SUMMARY OF CASES.

I give a summary of the four cases in which I have tried this procedure. I hoped to have operated on some more cases before I reported them, but I thought that this was a favourable opportunity to bring forward the work I had already done, in the hopes of encouraging further research on this subject.

CASE I.

Male, aged 14 years. Admitted, June 9th, 1915, to the London Hospital, under the care of Drs. Hadley and Lewis Smith. Has never had scarlet fever. Sudden onset of present illness a few days previously. Complains of severe headaches and vomits intermittently. General oedema, extreme pallor; oliguria very pronounced, as little as 6 ounces of urine passed in twenty-four hours. Urine: Solid with albumin; specific gravity 1045; casts; no blood. Systolic blood pressure 120 mm. of mercury.

Shortly after admission had fever lasting a week, highest temperature 103° F. After ten weeks in bed on the usual medical treatment he showed evidence of improvement, and went out with very slight oedema of legs and a trace of albumin in the urine.

Relapsed March, 1916, after a chill. Readmitted June 8th, 1916. General oedema and pallor. Urine: Oliguria—8 to 12 oz. a day; solid with albumin. Systolic blood pressure remained at 115 to 120 mm. of mercury. Up to September 27th no improvement at all on usual treatment. No real dyspnoea.

September 28th: Operation under open ether. The right kidney stripped *in situ*. The kidney appeared moderately enlarged, paler than normal; it bled too freely, and was friable. The capsule stripped easily. No evidence of fibrosis. A rubber drain left in for a few days. October 25th: Left kidney stripped. November 1st: Urine ½ albumin. November 14th: Urine ¼ albumin. Left hospital improved but by no means cured.

Seen again on May 1st, 1919. Appears to be in perfect health. Able to do a full day's work. Urine: Specific gravity 1010; a trace of albumin. No oedema, no pallor. Blood pressure normal.

When seen again on November 13th, 1919, was perfectly well.

CASE II.

Male, aged 27 years. Admitted to the London Hospital under the care of Dr. Hadley March 4th, 1920. Eight months previously attended Brompton Hospital for tuberculosis of the lungs; discharged improved in October, 1919. November, 1919, submucous resection of nasal septum performed. December, 1919, general oedema and pallor.

On admission general oedema and ascites, dyspnoea, anaemia, and pallor; no fever; frequent vomiting. Urine: Albumin ½ to ¼; casts; blood; polyuria, 70 to 90 oz. a day; specific gravity 1011, urea 1.1 per cent. Optic discs blurred. Systolic blood pressure 175 to 180 mm. of mercury. The apex beat was in the nipple line in the fifth space.

* Contributed to the Urological Section of the Royal Society of Medicine, October 28th, 1920, following Sir Thomas Horder's paper on the same subject (BRITISH MEDICAL JOURNAL, November 13th, 1920, p. 727).

April 4th, 1920: Getting rapidly worse; orthopnoea; oedema of lungs; cannot lie down at all, and has to be nursed in a chair. On April 12th I persuaded Dr. Whyte, a resident, to administer ether to the patient in the upright position. As soon as the patient was "under" he was placed on his face over an air-bag, in which position he was able to breathe sufficiently well for me to proceed with the operation. I stripped both kidneys in twenty-four minutes from the first cut to the last stitch. There was advanced oedema of the perirenal fat. The capsule was thin and friable, and very adherent to the kidney substance, and stripped badly. There was no shock, and the same night the patient was able to sleep quietly lying on his back, propped up by pillows. In a few days the oedema had much diminished and the dyspnoea had disappeared. The improvement was only maintained for a few weeks, and then the symptoms returned again, though the dyspnoea did not become so bad.

He went to the infirmary, where he died of phthisis and uraemia on September 6th, 1920. There was no *post-mortem* examination.

CASE III.

Male, aged 18 years. Admitted to the London Hospital under the care of Dr. Hadley, June, 1920, with a history of six months' general oedema and pallor, and headaches.

On admission, general oedema, pallor. Urine: Albumin ½; casts; polyuria, as much as 90 oz. in twenty-four hours. Systolic blood pressure 170 to 180 mm. of mercury.

Operation July 22nd, 1920. Dr. Whyte administered open ether. I stripped the right kidney in thirteen minutes, the left in nine minutes. Capsule stripped easily. Kidneys enlarged, pale and mottled and fatty. No oedema of perirenal fat. Lymph oozed out of kidney on stripping. Portion removed for section.

The patient improved at once. In October, 1920, he was able to go about and looked upon himself as well. There is, however, still a little albuminuria, and the legs swell very slightly at times.

CASE IV.

Male, aged 20 years. Admitted to the London Hospital July, 1920, under Dr. Hadley, with a history of general oedema since six weeks before admission.

On admission, general oedema, pallor not marked; no vomiting; no fever; no headache. Urine: Solid with albumin; specific gravity 1020-1025; oliguria, 18 to 32 oz. in twenty-four hours. Systolic blood pressure 130 mm. of mercury. No improvement after five weeks' medical treatment.

Operation on July 22nd, 1920. Dr. Probyn Williams administered ether. Each kidney stripped in eleven minutes. Fluid poured out of perirenal fat. Capsule thickened, stripped badly, and tore pieces of kidney out. Marked fibrosis. Kidneys not enlarged; capsule pale because of the oedema of capsule itself; the cortex appeared to show areas of fatty degenerations, but was not diffusely and completely degenerated as in the other cases.

Three weeks later the oedema had disappeared, the urine had increased to normal amount, and the albumin had diminished. The patient was getting up in September, but then got chilled when sitting about the ward, and relapsed.

RECONSTRUCTIVE ANEURYSMORRHAPHY IN THE THIRD PART OF THE AXILLARY ARTERY.

BY

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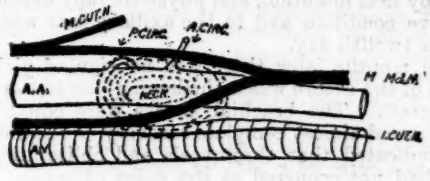
A MAN, aged 25, wounded in March, 1918, was, after three months in hospital and dépôt, returned to his unit. He was demobilized in 1919, and resumed his occupation as a baker. At that period he had, at most, occasional aching in the axilla. In February, 1920, he noticed a swelling in the armpit which increased slowly in size; it was accompanied by a feeling of heaviness in the left upper limb after use. After a short time he began to experience pain radiating down to the index and middle fingers and to lose power in the index. After six months' delay he was admitted to the Manor House Hospital.

It was seen that the patient had sustained a through-and-through bullet wound of the left axilla. A fine scar above the lower margin of the pectoralis major one inch and a half from its insertion indicated the entry, and a slightly larger one a little outside the inferior angle of the scapula the exit. In the line of the artery was an aneurysm the size of a large walnut, its upper third lying under cover of the anterior axillary fold. The expansion was forcible, but not great in extent; the tumour could not be emptied by pressure owing to the pain referred to the index. There was no venous hum. The adjacent tissues were not thickened—the tumour was quite discrete—very little inflammation or effusion had evidently accompanied the wound. There was slightly impaired sensation of the ends of the index and middle fingers; flexion of the index was very weak. The peripheral circulation of the limb did not differ from that on the other side.

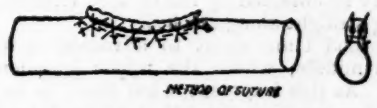
Operation.

Open ether was administered by Dr. Bookey, and Mr. A. E. Woodall, F.R.C.S. (resident surgeon), assisted.

The arm was fully abducted, and an incision four inches long was made in the line of the artery, its centre over the aneurysm, and its upper end curving inwards towards the chest wall. The deep fascia was divided to the full extent of the wound, and the axillary artery was exposed one inch above the upper limit of the aneurysm; the minimum amount of dissection was done to permit the application of a Crile's artery clamp at this spot. The vessel was then treated similarly below the sac; the two



clamps lay above the anterior circumflex and the profunda artery respectively. The aneurysm was next defined by sharp dissection. Only at the lower and inner part was there any difficulty; elsewhere the tumour required only a few touches of the knife to free it. When the vein had been separated at the lower and inner part it was seen that the inner head of the median was bound to the aneurysm by dense fibrous tissue; when this was divided, however, the nerve showed no break of continuity. The sac was then defined up to its point of origin from the artery, to which it was moderately adherent up to its neck, and then opened by a longitudinal incision. At once it became apparent that the collaterals needed control. The branches arising between the clamps were quickly defined by blunt dissection, the flow from the sac being checked by pressure, and a clamp placed to include them; very slight pressure secured complete haemostasis. The



opening from the artery was oval (¾ in. by ½ in.); at the junction of vessel and sac there was a ring of almost cartilaginous density, as became evident later on an attempt to pass the needle at this spot. The sac, which was free from clot, had the thickness of blotting paper; its interior looked smooth and shiny everywhere. Two branches had been clamped—the posterior circumflex just above the level of the opening, and the anterior at its lowest level, each at a part of the artery opposite to the opening into the aneurysm. A test was made to determine the relative importance of these in the collateral circulation. With the posterior vessel clamped the flow from the anterior was the feeblest possible trickle. That from the posterior was considerable, steady, and in quantity about equal to that from a radial vein.

It was estimated that to suture the edges of the opening, allowing for a fair depth of apposition of the intima, would diminish the diameter of the vessel, compared with the part above, to about two-thirds, which seemed adequate. The sac was therefore cut away, leaving only a thin rim round the neck. The whole area was kept moist by normal saline. With a non-cutting fine needle a continuous suture was introduced, beginning above and finishing below the opening, passing through the arterial wall immediately adjoining the thick ring; the stitching was mattress in type, every other stitch returned slightly to give a locking effect. The material was very fine silk.

The clamp on the collaterals was then released and fairly free oozing occurred, the fineness of the silk having prevented any but the slightest tension in approximation. The clamp was again tightened and a stronger silk suture was introduced, the needle traversing the artery wall on either side and returning similarly through the rim of sac, thus embracing the hard ring and securing apposition of

its opposite sides. For further safety these stitches were made to cross in pairs. The clamps were released in order, first from the branches, then the distal, then the proximal, and, as the severest test, the distal clamp was tightened again. There was not the slightest oozing. In view of the exposure of the site of suture to strain, a graft of fascia lata was fixed as a collar round the vessel at this point, with its fibres transverse to the line of the artery, and with slits to allow the passage of the circumflexes. Above and below a loose stitch in the fascia near by prevented telescoping. The wound was then closed and dressed with gauze wet with 1 in 2,000 flavine. At the close of the operation the radial pulses were equal.

After-History.

Convalescence was uneventful. There was pain referred to the index and middle fingers for three days. The wound healed by first intention, and physiotherapy appropriate to the nerve condition and to the axillary scar was adopted from the twelfth day.

Three months later there was no sign of yielding; at the site of the suture was a thickening due to the presence of the graft. The brachial pulses were equal and the index showed almost complete recovery. Pulsation, though slight, indicated that thrombosis and obliteration of the artery had not occurred at the point of suture.

FRACTURE OF FEMUR: A SIMPLE METHOD OF EXTENSION.

BY

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FRACTURE of the femur in private practice is always looked upon with apprehension, and even in hospital work with some degree of anxiety.

One great reason for this attitude is the necessity for having a complicated apparatus made up of iron framework, a mast and guy-ropes, all requiring frequent adjustment and refitting, to the pain and distress of the patient. This, perhaps, may not be true of fractures below the middle of the shaft, as in these cases fair results may be obtained by use of foot extension with the limb lying straight along the bed.

The method I am about to advocate is for fractures above the middle, where the upper fragment is flexed forwards. As this fragment is too short to be maintained in any other position than that allowed by the muscles attached to it, it becomes necessary for the lower fragment to be brought into line with the upper, at the same time keeping up extension in that line. In such a case the patient is placed in bed on his back, the head and shoulders being supported by two or three pillows. The knee of the injured limb is raised until the femur is at the required angle, which is generally about 30 to 40 degrees to the horizon. It is maintained in this position with a knee pillow, or better still by a pyramid of sand-bags. A ring-shaped air-cushion is slipped over the foot, drawn up to the knee and inflated as fully as possible, the foot being allowed to fall back on the bed. A strong bandage is tied round the air-cushion exactly opposite the knee and the other end carried to a pole or mast fitted to the foot of the bed; strong traction is made in the line of the upper fragment, lower fragment, diameter of cushion, bandage and point on mast, until the ring becomes definitely oval, when the bandage is fixed to the mast. It will be seen that the extension is procured by a pneumatic pad in the flexure of the knee, and that the strain is transmitted to the femur through the head of the tibia and the ligaments of the knee-joint. These being rigid structures serve the purpose well.

Pneumatic pressure at the point indicated is justifiable, because all the great nerves and blood vessels dip deeply here under the heads of origin of the gastrocnemii, which being massive and fibrous in this situation are well adapted to support continuous pressure and protect underlying structures.

The advantages attendant on this method are:

1. Simple apparatus. A few pillows, a long piece of stick, a bandage and a ring air-cushion or inner tube of a motor tyre. Such things can be obtained almost anywhere at very short notice, and there is no need to keep apparatus of various sizes in stock.
2. Ease of application. No skilled assistance required.
3. Once fixed adjustment is very seldom required. The bed-clothes are arranged so that the ring-cushion is uncovered and visible, a glance at its shape informs one immediately of the degree of tension and inflation.
4. The foot hanging over the pneumatic pad acts as a kind of rudder and prevents rotation of the lower fragment, or if desired it can be pushed inwards or outwards, rotating the lower fragment in any required direction.
5. There being no pulleys, guy-ropes, weights, or iron frame, there is very little necessity for disturbing the patient, which saves much anxiety and suffering. A bed slipper is easily adjusted.
6. The thigh is supported underneath by sand-bags, and others may be used at the sides if required to give a sense of security, but these are not necessary. The thigh can therefore be fully exposed, permitting easy examination, dressing or massage of suitable type, all without any disturbance of the fragments whatever.

I have treated only one case by this method:

A boy, aged 10 years, sustained a simple fracture of the right femur above the middle of the shaft. He remained in the apparatus for four weeks with the very slightest adjustments. At the end of that time, union being quite strong, the limb was removed from all restraint. At first any attempt to straighten the limb caused pain in the knee-joint, but full flexion and extension returned without assistance within forty-eight hours. The only evidence of pressure by the pneumatic pad was a very superficial blister, which no doubt would have been obviated by binding lint over the rubber before application. The shortening was under a quarter of an inch. At no time was there any numbness, tingling, or oedema of the leg or foot.

The extreme simplicity and efficiency of this method, as compared with many devices advocated, are my excuse for seeking publication.

AN UNUSUAL CASE OF MYELOCELE.

BY

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IN practically all the standard textbooks myelocele is stated to be incompatible with life, the infant being either stillborn, or dying within a day or two. Bland-Sutton holds a somewhat different view. He states:

"Many children in which this condition is present are stillborn: the few that survive their birth rarely live longer than three days, the continual leakage of cerebro-spinal fluid being sufficient to explain the invariable brevity of their lives." (*Tumours: Innocent and Malignant.* 1917.)

He thus admits the possibility of survival beyond the first day or two.

In inquiries, admittedly limited, which I have made on this subject, I have been unable to trace a single case in which the duration of life exceeded a period of three days. I have therefore thought that the following case, in which life was prolonged for twenty-three days, merited publication.

I was called to see the patient, a male infant, an hour after its birth, at the Ilford Maternity Home, during the early hours of September 18th, 1920. The reason for the early call was that the infant seemed very feeble and had difficulty in breathing. On arrival I found a well-nourished, good-sized baby, which soon revived and cried lustily. He had a well-shaped head, with no evidence of hydrocephalus.

The lower limbs were held rigidly flexed to a right angle at the hips, and rigidly and completely extended at the knees. The legs resisted straightening, and were paralysed, wasted, and, as far as could be made out, anaesthetic. There was double talipes equino-varus, the varus element markedly predominating, with a well-marked crease on the soles, corresponding to the transverse tarsal joint.

Looking at the back, there was a large, raw, circular area, somewhat depressed, and corresponding to a deficiency in the neural arches and failure of closure of the neural groove, opposite the lower three lumbar and upper two sacral bodies. The open spinal cord was seen in the middle line at the upper part of the defect, while the nerves of the cauda equina could be distinguished in the lower part. The myelocele narrowed and deepened as it was traced upwards into the funnel-shaped termination of the central canal. Cerebro-spinal fluid was constantly, though slowly, dripping out of the apical opening, bathing the raw area, and then running in drops over the buttocks. The surrounding skin was rendered as far as possible aseptic, and a dressing applied. The next day the flow of cerebro-spinal fluid was freer, and some congestion developed round the myelocele. During the first week the child's condition remained good. The raw area gradually contracted down and became deeper, while the inflammatory redness subsided.

The child now passed temporarily out of my care, being transferred to the Ilford Isolation Hospital. Here it was kept for several days, during which its condition was reported to be quite satisfactory. It was then sent back to the mother. When the child was over a fortnight old the mother naturally began to doubt the soundness of my prognosis, which had already been belied by the child living as many weeks as I had assured her was his maximum expectation of days. She expressed herself anxious for further advice, and I was making arrangements for the infant to be seen by Mr. W. H. Clayton Greene, when, during the third week, meningitis set in, and the little one died on October 11th in a storm of convulsions. It was thus twenty-three days old on the date of its death. Owing to the fact that both mother and child left the district a few days before the latter's death I was unable to witness the end. For the information about the date and manner of the infant's death I am indebted to Miss Roberts, the matron of the Maternity Home, who obtained it in a personal interview with the mother.

Another point arising in connexion with this case is the frequency of myelocele when compared with the other types of spina bifida. Sir John Bland-Sutton is quoted by many authors as stating that myelocele is the commonest variety of spina bifida; he admits, however, that of all cases that survive birth probably two-thirds are meningo-myeloceles. Of the seven cases of spina bifida of which I have personal knowledge the one here described is the only case of myelocele; one was a meningocele, one a spina bifida occulta, and the remaining four were diagnosed as meningo-myeloceles. I have yet to see my first case of syringo-myelocele.

In reference to the frequency of spina bifida in general practice the experience of a local practitioner of thirty years' standing is instructive. He has met with but two cases during this period in a practice which, to my knowledge, is exceptionally busy.

THE ACTION OF THE INTRINSIC MUSCLES OF THE FOOT AND THEIR TREATMENT BY ELECTRICITY.

BY

G. MURRAY LEVICK, M.R.C.S., L.R.C.P.,

ELECTROLOGIST TO ST. THOMAS'S HOSPITAL.

MOST of the intrinsic muscles of the foot and the long flexors of the toes play important parts that do not seem to have been recorded. The flexors of the toes raise the longitudinal arch of the foot, because when the weight of the body is thrown forward, as the heel leaves the ground in walking, their action is to draw the heel towards the toes, acting as bowstrings across the arch from heel to toe. For this reason the correct way to land from a jump is to have the whole weight of the body borne between the balls of the feet and ends of the toes, and, when patients are doing this or being given heel raising exercises in the standing position, they should be told to "grasp the floor with the toes," which thus become the fixed points from which their flexors act.

Flexor brevis digitorum has the strongest arch-raising action, owing to its insertion into the second phalanges, placing it at a disadvantage in bending the toes compared with flexor longus. The flexors of the toes should be used to assist progression in walking fast or running, and most people use them for this purpose. They thus support the arch at the moment when the greatest strain falls upon it. Flexor brevis hallucis, pulling from the cuboid to the first phalanx of the great toe, probably assists considerably in supporting the transverse arch.

The transverse arch is maintained chiefly by the dorsal interossei, and this is their most important action. In a demonstration given recently at the Royal Society of Medicine, I think I showed this clearly, using the method I shall describe shortly, and giving a clear picture of these muscles with their bipennate origins, drawing the metatarsal bones together. To describe the action of one of these muscles will suffice to explain the action of the rest. We will consider the second metatarsal bone as the "keystone" and as the middle line. When the second dorsal interosseous muscle contracts, it performs the following rôles, in the order given. These rôles have been carefully observed during electrical stimulation, first of individual muscles and then of the group as a whole.

1. Feeble contraction. Abduction of first phalanx from middle line.

2. Stronger contraction. Flexion of metatarso-phalangeal joint *plus* the pull on the extensor tendon. End of toe brought into contact with the ground. (In voluntary movement this contact is of course strengthened by the long and short flexors.)

3. Powerful contraction. The fixed points from which the muscle acts are now (*a*) the second metatarsal bone, (*b*) the insertion of the tendon into the first phalanx. As the muscle contracts, the third metatarsal bone is drawn towards the second—that is, towards the middle line. In voluntary movement the second metatarsal is fixed by the opposition of the first dorsal interosseous muscle, which also fixes the first phalanx of the second toe while it is drawing the first metatarsal bone towards the second, and so on. As each metatarsal bone is drawn towards the second, it is pulled into a plane below that of its more mesial neighbour, so that the second metatarsal—the keystone—is raised upwards. This movement is aided by the metatarsals being brought into line with the arch of the cuneiform bones.

The following is the method by which all the muscles I have mentioned may be exercised and brought into a state of efficiency, even when they are wasted and unhealthy from prolonged pressure and disuse. It demonstrates conclusively also the actions I have described above.

The foot is placed in an ordinary porcelain arm bath containing a sufficient depth of warm water to reach just below the external malleolus. The heel rests on a carbon electrode, to which is connected one of the terminals of a Smart-Bristow coil. Another carbon electrode, connected with the other terminal, is held in the left hand. It is dipped into the water in front of the toes. The right hand manipulates the core of the coil so that a surging faradic current is sent streaming through the intrinsic muscles of the foot. Experience will teach the operator how the position of the electrodes may be altered so as to obtain contraction of the different muscle groups at will, and their action is thus displayed in a particularly useful and pleasing manner.

As we proceed to carry out this treatment and place the electrodes in the required positions a clear view is gained of the transverse arch of the foot, rising and falling in time with the contraction and relaxation of the dorsal interossei. It is seen that this is a powerful action and emphasizes the importance of these muscles. The best position for the electrodes varies in different patients, but as a rule in treating the transverse arch I have them on each side of the front of the foot. The longitudinal arch, lateral and medial, is best operated with the heel on one electrode as first described. No stimulation of the long flexors takes place with this technique, and the action of the short flexors of the toes in raising the longitudinal arch will come as a complete surprise to those who see it for the first time, as it is so very marked. The long toe flexors and tibialis posticus can be stimulated in turn by detaching the cord from the electrode at the heel and fixing it to a disc electrode covered with a handful of wet lint so that it can be applied to their motor points, the other electrode occupying a suitable position in the bath. Flexor longus hallucis and flexor longus digitorum when stimulated in this way will be seen to raise the longitudinal arch to a very marked extent.

As to the indications for the application of the above technique as a method of treatment, these are several. It is applicable when the preliminary stages of flat-foot are curable by physiotherapy, and to the after-treatment of those more advanced cases which have been wrenched and fixed in plaster or have undergone surgical operation. Regarding the first class, there are many people walking about the streets suffering from what they describe as tender feet, and these people, experiencing pain on movement of the tarsal joints, avoid this as far as possible by planting their feet flatly on the ground with the toes pointing too far outward. This leads them through the successive stages of flat-foot.

Common causes of tender feet are deformity of the first metatarso-phalangeal joint owing to the fashion, common to almost the whole of civilization, of wearing boots shaped like a lead pencil, and, in women, the wearing of high

heels, because this tilts up the metatarsals at the back so that their heads press too much downward at the metatarso-phalangeal joints and cause sprains. The splintage of the foot in too tight a boot also causes atrophy of the intrinsic muscles from pressure and disuse, so that they become unhealthy and accumulate fatigue products and probably uric acid. The circulation of the whole foot becomes impaired in these cases, the tarsal joints suffering in common with the rest of the part. Walking in the manner above described entails the relaxation of all the arch-raising muscles, with obvious results.

Faradic treatment given in the manner I have explained yields surprisingly rapid results in such cases. The nutrition of the whole foot is quickly improved, and in most cases metatarsalgia disappears. As a preliminary to voluntary exercise after surgical operation it is highly to be recommended. It is waste of time, and discouraging to the patient, to begin re-education before these muscles are in at least a fair state of nutrition, and I regard it, after seeing the surprisingly good results that it yields, as essential in the satisfactory treatment of flat-foot. It is often impossible or extremely difficult to develop the small muscles by voluntary exercise alone. This applies especially to those cases that have been repostured by surgical methods, so that the muscles are relaxed after a long period of overstretching with the accompanying atony.

It is very important that the treatment should be given with care and intelligence, because the muscles are completely at the mercy of the operator, and treatment must progress by easy stages from a gentle beginning, otherwise the muscles will be over-fatigued and the condition aggravated. The contractions must be rhythmic, they must not last too long, and they must be divided by periods of complete relaxation. A Smart-Bristow coil is almost essential, as the best results cannot be obtained with the other coils in common use at the present time.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

LABOUR IN A CASE OF ENCEPHALITIS LETHARGICA.

THE following case came under our care at the Aberdeen Maternity Hospital, and as the condition seems to be very rare, these notes may prove of interest.

Mrs. L., a primipara, was admitted to the Aberdeen Maternity Hospital on February 12th, 1921, with the history that she had been suffering from "sleepy sickness" for ten days. The patient was stated to be nearly at term.

She was very drowsy, but could be roused to answer questions sensibly. She had a dull, vacant, mask-like facies, no wrinkle being present on the brow or face. The eyelids drooped, and could not be raised to the full extent. Movements of the face and tongue were sluggish, but there was no limitation of ocular movements and no nystagmus. Reflexes were normal with the exception of the knee-jerks, which were exaggerated, and the abdominal reflexes, which were absent. The pupils responded sluggishly to light. The patient was very constipated and the mouth was very dirty. The child was presenting by the vertex, and the head was engaging the brim of the pelvis; the foetal heart sounds were heard distinctly in the middle line below the umbilicus, and the rate was normal.

On February 13th the patient became restless and seemed less lethargic; attempts to bear down were noted. Shortly after this the membranes ruptured and the os was found to be fully dilated. Bearing-down efforts were poor during the second stage and seemed to be sluggish, but the patient did not seem to appreciate much pain, though when questioned she stated she felt the pains. The head was delayed at the outlet, owing as it seemed to insufficient expulsive powers; delivery was therefore completed with forceps under a very light anaesthesia of chloroform and ether. The child weighed 9 lb. 9 oz. The placenta came away thirty-five minutes later, and during this time the patient became very lethargic; this condition continued for twenty-four hours, and it was with great difficulty that she could be roused at all. During this time it was noted that the left pupil was smaller than the right, and that there was a left external strabismus; there was incontinence of urine. On being questioned she would stop in the middle of her answer and apparently go to sleep. On February 17th she became less lethargic and took at times some interest in life, displaying interest in the baby when it was shown to her. When questioned regarding it, she had no recollection whatever of the labour. The baby was quite healthy and showed no signs of drowsiness or oligopnoea at birth or after. On the tenth day of the puerperium the patient was transferred to the City Hospital, her condition being much improved.

It will be seen that in this case pregnancy seemed to be unaffected by the disease, but the lethargy was exaggerated for the first few days after labour, and especially for the first twenty-four hours. The patient slept through the first stage of labour without giving any sign that labour was in progress, and the end of the second stage was delayed on account of defective expulsive efforts. The third stage was normal in every respect and no excess of blood was lost. The puerperium, except for the conditions noted above, was uneventful and the uterus underwent normal involution.

We are indebted to Professor McKerron for permission to publish this case.

W. F. THEODORE HAULTAIN, O.B.E., M.C.,
M.B., B.Ch., Obstetric Physician, Maternity Hospital.
G. O. THORNTON,
House-Surgeon, Maternity Hospital.
Aberdeen.

HERPES AND VARICELLA.

THE following case illustrating the herpes-varicella association may be of interest to record for the following reasons: First, there seems no possible doubt as to the varicella infection having been passed on from the herpes case, as both patients were inmates of the same house, standing by itself right out in the country; moreover, during the possible incubation period of the varicella no visitors came to the house nor had any cases occurred in the neighbouring farms or villages as far as I could ascertain. Secondly, taking the incubation period of varicella as fourteen days it would appear that herpes can remain infectious for at least seven days from its eruption.

On January 27th I was called to see a girl aged 25 who was complaining of pain in the right iliac fossa, simulating appendicitis. On January 28th a few vesicles were noted in this area, and on the following two days a typical herpetic eruption came out over the right buttock, groin, vulva and inner side of thigh; there were no vesicles elsewhere on the body. Three weeks later, on February 18th, the patient's small brother, aged 4 years, developed the typical eruption of varicella; during the whole intervening period he had been in and out of his sister's room daily.

I might add that I was quite unable to elucidate the origin of the herpetic infection; the patient, however, worked in a clothing factory some four miles away from her home.

Desborough. G. F. P. GIBBONS, O.B.E., M.B.Lond.

IN view of the recent reports of the apparent relationship between herpes and varicella, the following cases appear worthy of note: During the first week in January, 1921, I saw a girl, aged 9 years, who had a typical varicella rash. One week later a younger sister was brought to me complaining of pain in the fifth right intercostal space, and on the following day there appeared a herpetic eruption confined to this region.

Both children soon got well, but during their convalescence a third child in the same house had an attack of varicella. There were no other cases of varicella which I attended at the time, so I was led to suppose that the herpes in the second case acted as a link between the two cases of varicella.

Fochriw, Glam. T. STENNER EVANS, M.B., B.S.Lond.

TREATMENT OF LOCAL LEISHMANIASIS.

THE note by Colonel Erskine Risk on the treatment of Baghdad boils by scraping (February 19th, p. 267) leads me to say that it is by far the most satisfactory method of treatment hitherto suggested.

During 1917 and 1918, while serving in Mesopotamia, large numbers of Indians suffering from these sores came under my care, and I had ample opportunity to observe the results of treatment. My routine treatment was to scrape the sores thoroughly with a sharp spoon, and then to cauterize the base with pure carbolic. I treated more than two hundred cases in this way, and the average length of time which elapsed before the sores were completely healed was seventeen days. I found that sores on the face healed more quickly than on any other part of the body after scraping.

As far as I could ascertain recurrences were very uncommon, and the scars left were far less obvious than when the sores had been treated by any other method. The secret of success lies in the thoroughness of the scraping, especially at the edges of the sore.

Newmarket. NORMAN GRAY, M.D., B.Ch.Cantab.

Reports of Societies.

CHEMICAL ESTIMATION OF GASTRIC FUNCTION.

AT the meeting of the Medical Society of London on February 18th, Sir W. HALE-WHITE presiding, a discussion took place on the chemical estimation of gastric function.

Dr. J. H. RYFFEL, in opening, gave a summary of chemical work on the stomach, and dealt in particular with the two test meals most generally used—namely, that of Ewald (tea and toast) and that of Boas (oatmeal gruel). After showing a large number of gastric-analysis charts, with the curves for acidity and for free hydrochloric acid, Dr. Ryffel summarized the results of his observations by saying that in carcinoma ventriculi the only distinctive type was carcinoma of the pylorus, with no free HCl, high mineral chloride, lactic acid, and blood with the "coffee grounds" appearance. Cases of carcinoma in which there was no gross obstruction were far less distinctive. Lactic acid was usually absent, free HCl was absent, and the physiologically active HCl was low, but this held good of many other conditions as well. Mineral chloride was nearly always high, but it was occasionally high in other conditions with low HCl, such as pernicious anaemia. Occasionally in these cases the free and the active HCl were normal; the mineral chloride was high, but high mineral chloride might be found in ulcer of the body of the stomach, especially with regurgitation. The presence of blood would not distinguish from ulcer. Blood might be due to trauma during aspiration of the meal, and in this connexion he had found it necessary to insist on examination of the faeces for blood in every case. If blood in the gastric contents was due to slight trauma during aspiration, no blood would be found in the faeces; blood also might be found in the faeces when it was not appreciable in the gastric contents. Spectroscopic examination of the faecal extract for acid haematin and haematoporphyrin, in addition to the ordinary tests for blood, was very useful. In simple ulcer, especially ulcer of the body of the stomach, the HCl was not by any means always above normal, and here again the bleeding was capricious; blood might be absent from the stomach but present in the faeces, or absent from both. Whether the older form of test meal or the fractional meal were employed, cases needed to be further tested by the examination of the faeces for blood, and, of course, all such tests could only be usefully employed in conjunction with the clinical study of the case.

Dr. J. A. RYLE was specially interested in the diagnostic possibilities of the fractional method of gastric analysis, and thought it of first importance to keep the method as simple as possible. The fractional test meal might at a sitting definitely establish a diagnosis of pyloric stenosis. In active pyloric or duodenal ulceration a very striking curve was obtained. In all fractional tests it was of special importance that the resting juice of the stomach should be carefully examined.

Mr. E. C. DODDS said that valuable information might be obtained with regard to gastric secretion by taking the percentage or tension of the carbon dioxide in the alveolar air. He gave examples of the typical diphasic curve of tension of CO_2 obtained in taking the meal, and said that he believed the rise which was shown was gastric in origin, due to secretion of hydrochloric acid, and that the fall was due to gastro-intestinal secretion, probably pancreatic.

Dr. T. I. BENNETT urged that if any valuable estimate of gastric function was to be made, it must be made by some method which tested samples taken at every phase in the gastric scale. Any gastric test which was taken at a fixed point after the ingestion of a meal must be liable to grave fallacy, and in proof he showed curves illustrating the variation of gastric function at different times in normal persons.

Dr. R. L. MACKENZIE WALLIS also gave particulars of gastric tests and advocated the Ewald test meal, because it enabled a complete analysis to be made, not only of the total acidity and the free HCl, but of the mineral chlorides as well, and these mineral chlorides furnished a definite indication of regurgitation or neutralization such as was met with in carcinoma of the stomach.

Dr. G. GRAHAM wanted a more complete chemical analysis than was usual with the fractional test meal alone. One could not do a complete chemical analysis every quarter of an hour, but it should be possible to do a complete analysis at the end of the hour. If the test meal was going to be done it should not be started until it was certain that the patient was no longer constipated.

Dr. W. H. WILLCOX also urged the need for chemical accuracy with the test meal. In the fractional test meal one worked with such small quantities that there was considerable danger of error in the acidity and hydrochloric acid determinations thereby made. He thought that the fractional test meal had not completely supplanted the older method of the hour test, which remained a very valuable means for eliciting the condition of the stomach.

Dr. RYFFEL, in reply, agreed with Dr. Willcox that the old form of test meal was by no means outdone. Certainly it would be an improvement, if it were practicable, to combine the fractional method with the other. In answer to a question as to the usefulness of determining ferment activity, Dr. Ryffel said that he had done practically nothing in this line himself, being somewhat hesitant about accepting the idea that rennin determination would practically reflect pepsin.

HABITUAL DISLOCATIONS.

AT the meeting of the Subsection of Orthopaedics of the Royal Society of Medicine on March 1st the subject of recurrent or habitual dislocations was introduced, and several cases were shown by Mr. O. L. Addison, Mr. H. A. T. Fairbank, and by others who took part in the subsequent discussion.

Mr. LAMING EVANS (the President) defined such dislocation as the condition of a joint which, after dislocation had occurred and had been reduced and had remained reduced, offered a subnormal resistance to redislocation, and in fact suffered repeated dislocations by slight force. The terms "recurrent dislocation" and "habitual dislocation" were accepted as synonymous, though the term "habitual dislocation" was the more accurate. Of these dislocations, that of the shoulder-joint was by far the most common, partly owing to the fact that 50 per cent. of all dislocations occurred at the shoulder, partly because of the methods of reduction in unskilled hands, partly because of defective after-treatment, and partly because of the pathological lesions inflicted by the original injury. Habitual dislocations might be due to osseous, capsular, ligamentous, tendinous, or muscular causes. The pathological lesions which might be present were most various, and this meant that on occasion different methods of treatment must be adopted. He divided the methods of treatment into five: (1) Palliative, by appliances of various material and design; (2) physiological, in the direction of increasing the tone of muscle, tendon, and ligament; (3) reefing operations upon the capsule, either by plication or by excision and overlapping; (4) repair of ruptured tendons and musculo-tendinous insertions; (5) muscle transplantation. A fair trial of mechanical support and physiological toning should be given in all cases before operative measures were adopted. Reefing operations had undoubtedly been followed by many successes and not a few failures. Muscle transplantation had been performed by detaching the posterior fibres of the deltoid, passing them round the neck of the humerus, and fixing them in front, so that they offered support to that part of the capsule which was weakened both in subglenoid and subcoracoid dislocations. Opinions differed with regard to the fate of the transplanted muscle. Some held that it retained its contractile power, others that it underwent fibrous degeneration and acted as an additional extracapsular ligament. He gave an account of a case of his own in which Clairmont's operation was performed six months previously, so far with a satisfactory result, although the shoulder had been dislocated very easily, even by the act of sneezing.

Mr. T. H. OPENSHAW said that about fifteen years ago a patient was brought to him whose right shoulder had been dislocated fifty times. He tried various expedients, but got no satisfactory results until he divided the subscapularis, and since doing so there had been no further dislocation. He was convinced that the cause of the dislocation in this instance was over-action of the subscapularis. He had done the same operation since in about ten cases with perfect results.

Mr. A. H. TODD believed, as a result of electrical testing, that the piece of deltoid transferred retained its function; at least in some cases the transplant was not a dead mass. He instanced one case of his own in which Clairmont's operation had been done successfully: a woman who had had an innumerable series of shoulder dislocations, some of them induced by the act of sneezing, but comparatively painless, and capable of reduction without anaesthetic. No further dislocation had occurred during the four months since operation.

Mr. W. ROWLEY BRISTOW said that the use of the abduction splint had been urged in some quarters, but this was a very uncomfortable apparatus, and although there were occasions when it was absolutely necessary, it should be restricted, he thought, to such cases. As for the question of function of the transplanted portion of the deltoid muscle, the fact that in a particular case the transplanted portion responded to electrical stimulation was not proof. Such response would, he thought, occur in every case if a muscle were taken and a part of it divided. There was no time for the degeneration which would cut out the faradic response, and he would expect it to react to the faradic current for a period. Mr. Bristow went on to speak more particularly about recurrent dislocations of the patella. In the simplest of these cases a knee press or redevelopment of the internal vastus should be tried, and might suffice. There must be borderline cases, and one could imagine that the additional pull of a strong internal vastus might correct the tendency to outward displacement. A moderate ridge on the femoral condyle and a good vastus might suffice when a moderate ridge and a poor vastus would fail to prevent the patella riding out too far. The operative procedures were (1) the correction of knock-knee if present; (2) pleating of the capsule on the inner side, which he thought bound to fail; (3) shortening the quadriceps; (4) alteration of the line of pull of the quadriceps by transplanting half or the whole of the patella tendon to the inner side. He had adopted, in addition to the transplantation, a small bone graft after levering up the external ridge on the femur. He suggested that transplantation of the tubercle with a tendon attached was a better procedure than the transplantation of the tendon alone. He further suggested that the bringing forward of the external ridge in the outer condyle was a rational surgical procedure, and only added a few minutes to the time of operation, even when a small bone graft was driven into the femur.

TREATMENT OF STAMMERING.

AT a meeting of the Edinburgh Medico-Chirurgical Society on March 2nd, Emeritus Professor F. M. CAIRD presiding, Dr. HAMILTON G. LANGWILL called attention to the valuable work on this subject by the late Professor John Wyllie, and to his classical book *The Disorders of Speech*. His own remarks were largely an exposition of the principles of Wyllie's treatment. But he suggested that the recent treatment of stammering as a war neurosis by psycho-therapeutic methods opened up a new line of treatment which might be useful. The condition was commonest in late childhood and early adolescence, and rarely developed after the age of 20; it was much commoner in boys than in girls, and imitation was sometimes a factor in causation. Wyllie described two main types—one a silent sticking at the utterance of particular sounds; and the other, and more frequent, where there was an audible check with the rapidly recurring utterance of a sound or letter. To the latter type the name "stuttering" was often given. Stammering nearly always disappeared in singing. There were three elements in speech—expiration, vocalization, and articulation—and the essence of stammering lay in an inco-ordination between the two latter, the fault generally lying in too much attention to articulation and in defective vocalization. It was all-important that the patient should understand this double nature of his impediment, and, to make this clear, Wyllie used the simile of a violin where great stress was laid on the string hand, while the bow hand was neglected. Another great aid in treatment was the adoption of intoning, or the adoption of a different accent or tone of speech. Instruction must then be given in the physiological alphabet. The individual letters were to be separately practised, the general rule followed throughout of stressing the vocal element and touching lightly the articulating element. The vowel sounds gave little difficulty, but y and w, which were stepping stones between vowels and consonants, might give trouble. Thus "will you" should be practised as ōō-ill, ēē-ou. In the consonants, the voiceless ones, such as p, f, were more difficult for stammerers than the voiced, such as b, v, etc.; and the broad principle governing the practice of all letters was to touch as lightly as possible the voiceless initials and to emphasize strongly the vocal elements in letters. Examples of sentences for practice were given, these being constructed to contain the letters that were stammered, and being diligently practised with the teacher. The patient should stand up during practice, and should use a musical tone of voice. Patience, perseverance, and determination were essential for success.

Dr. A. GOODALL said he had found the simile of a bicycle where there was disproportion between pedalling and guiding more easily understood than that of the violin. The distinction between stammering and stuttering was not important. Dr. MEIKLE spoke of the disappointing results obtained by special classes in schools, possibly due to faulty methods of teaching, but largely owing to lack of interest by the pupils. Dr. TRAQUAIR drew attention to a hereditary element sometimes strongly present. There was a natural tendency to cure, greatly assisted by the determination of the patient to cure himself, and also perhaps by the stimulus of ridicule. Professor G. M. ROBERTSON believed that psycho-analysis might reveal some anxiety or fear at the root of many cases, and that the discovery and removal of this would then be the best treatment. This aspect of the question was also dwelt on by Dr. MURRAY LYON and Dr. BROCK.

Cervical Ribs and Pressure Symptoms.

Dr. EDWIN BRAMWELL and Dr. H. P. DYKES read a paper on the pressure symptoms sometimes associated with cervical ribs, rudimentary first dorsal ribs, and associated anomalies of the brachial plexus. The subject had become of interest to clinicians in the past twenty-five years, though Sir David Wallace had shown a case to the Society in 1890. There were four groups of cases: visible cervical rib without pressure symptoms; visible cervical rib with pressure symptoms; pressure symptoms, and cervical rib demonstrated by *x* ray; and pressure symptoms, with a negative *x*-ray examination, where, however, there might be a rudimentary first dorsal rib or some anomaly of the brachial plexus. The symptoms comprised supra-clavicular prominence and pulsation, scoliosis, evidence of pressure on the brachial plexus and subclavian artery in unilateral muscular wasting of the thenar eminence and abductor pollicis, pain, and occasional sensory disturbance and diminution of radial pulse. Oedema of arm and hand from venous pressure was very rare. Wood Jones believed the condition to be due to a fault or antagonism between the nervous elements and mesoblastic segments of the upper limb bud, and certainly pressure symptoms occurred without cervical rib. An *x*-ray finding of cervical rib, therefore, only corroborated the clinical evidence, and the diagnosis could not be based on the *x*-ray examination alone. The differential diagnosis from peripheral neuritis, progressive muscular atrophy, and syringomyelia was discussed. The condition was much commoner in women. As to treatment, many slight cases required no operative treatment; and rest of the arm and shoulder by sling, and counter-irritation over the brachial plexus were of value. Operation in selected and severe cases was very successful in the relief of pain and occasionally in improvement of muscular weakness.

Sir HAROLD STILES described the operation. He advised an ⌋ incision, the vertical limb along the anterior border of the trapezius, and the horizontal coming inwards along the clavicle; it should be free. Dissection of the parts then proceeded inwards. The greatest danger was injury of the roots of the nerve of Bell which pierce the scalenus

medius close to its insertion. These should be looked for, and the muscle then divided close to its rib insertion. Injury of the pleura was more easily avoided, and if it took place was not serious. He added to the symptomatology the occurrence of chilblains and of pain in the neck from pressure of braces and coats. He suggested that weakness of the trapezius was sometimes a factor in causing the condition.

THE INFLUENCE OF DIET ON THE TEETH.

AT a meeting of the London Association of the Medical Women's Federation on February 15th, when Mrs. FLEMING, M.D., was in the chair, Dr. HANDLEY-READ read a paper on "The influence of diet on teeth during the pre-natal period, dental caries, and pyorrhoea alveolaris." She emphasized the importance of accessory food factors as essential to growth, and pointed out how it has been proved that the antirachitic fat-soluble A vitamine was a necessity in diet if the hardest tissue of the body and that requiring the best nourishment—namely, the enamel of the teeth—was to develop properly. The temporary teeth were fully formed in the jaws before birth, though calcification began in the sixteenth week and continued throughout their existence; hence it was evident that the mother's mode of living during pregnancy and lactation must influence the teeth of the child, and her diet must include liberal supplies of fat-soluble A and water-soluble B vitamines. Even at the worst war period the diet of the poorest working woman of this country had just sufficient essential vitamines to produce bone and tooth tissue fairly well calcified, and observations at baby clinics, etc., showed that the teeth of all babies erupted fully formed with apparently good enamel; but if the diet was poor in essential vitamine (antirachitic) the enamel was found carious within a few months.

The infant's diet after weaning, the transition from liquid to solid food, should not be viâ pap food, as this was bolted without proper mastication and insalivation. By 1½ years of age, with normal dentition a child should be able to masticate an apple, while from 2 to 5 years a child should be capable of masticating any hard food. The County Council classes in their syllabus advised a diet which was almost entirely of pap food, and yet insisted on the importance of mastication!

Pyorrhoea alveolaris was now rampant all over the world among white and coloured races, and was also common in animals kept in captivity. It seemed probable that excessive carbohydrate and deficient antiscorbutic diet largely accounted for this. In true scurvy acute periodontitis was a marked symptom, and the teeth dropped out if antiscorbutic treatment was delayed. Probably modern diet contained sufficient antiscorbutic to prevent actual acute scurvy, but not to prevent chronic periodontitis. We had pyorrhoea because in the mouth we had damaged tissue in the form of inflamed gums, due to pap food; bacteria were always present, and we had a diet deficient in antiscorbutic vitamine. That many vegetarians suffered from pyorrhoea was probably explained by the fact that they were mostly very large consumers of carbohydrates and that their vegetables or fruit were rarely eaten raw. In Asiatic races caries was rare, but the teeth dropped out at middle age in those parts of the country where the antiscorbutic factor was deficient in the diet. Dr. Handley-Read then described several cases in which she found acute pyorrhoea which had completely cleared up on a diet of raw vegetables, salads, fruit, eggs, and a little milk, with very limited carbohydrate. Such an intensive vitamine diet produced astonishingly good results. While firmly believing in the efficacy of such treatment for chronic periodontitis, local treatment by drugs, vaccines, and irrigation was not to be neglected.

A discussion followed the paper, in which Dr. LEWIN, Dr. HARE, Dr. HARDING, and Mrs. FLEMING took part.

AT a meeting of the North of England Obstetrical and Gynaecological Society, held at Liverpool on February 18th, with the President, Mr. CARLTON OLDFIELD, in the chair, Drs. GEMMELL and LEYLAND ROBINSON (Liverpool) showed three specimens of uterine fibroids where other complications were present. In two of the specimens the fibroids coexisted with carcinoma of the body of the uterus. In the third specimen a left haematosalpinx was present, and was evidently produced by torsion, as evidence of ectopic pregnancy. Drs. WILLETT and HENDRY (Liverpool) showed a specimen of hydatidiform mole, with a well developed four and a half months foetus and placenta. They were of opinion that this was a case of twin pregnancy in which one ovum had undergone vesicular degeneration. Dr. W. W. KING (Sheffield) described a case in which acute symptoms arose during pregnancy from the rupture of a vein on the surface of a subperitoneal myoma of the uterus. At the operation a large quantity of free blood was found in the peritoneal cavity. The tumour was removed by myomectomy and the pregnancy left undisturbed. A discussion took place on Dr. Lacey's paper on induction of labour for moderate contraction of the pelvis, read at the last meeting of the society (BRITISH MEDICAL JOURNAL, February 5th, 1921, p. 195). The opinion of the majority of the speakers was that although excellent results could no doubt be obtained in hospital, as Dr. Lacey's figures showed, the method was extremely tedious in private practice, and apt to cause a good deal of anxiety to the patient and her attendant. Caesarean section should be the operation of choice where there was any reason to fear that delivery of a healthy full-term child by the natural passages was going to be impossible.

Reviews.

SURGICAL SHOCK.

PROFESSOR G. W. CRILE has rewritten his book on *Anoci-Association*, first published in 1914, but this time it appears under the less intriguing title of *Surgical Shock*.[1] As on the previous occasion, Professor Crile's name is bracketed on the title-page with that of his old and valued friend and assistant, Dr. W. E. Lower. This book, like all Crile's writings, is most stimulating, most provocative, and most speculative. It commences with a frank and interesting summary of the evolution in the Cleveland laboratories of the author's kinetic theory of shock. The many ingenious theories and experiments are here briefly reviewed, but, wide though their scope has been, they have led to negative more often than positive results. Crile has a wide vision, an all-embracing mind, but the issues which he raises, the problems which he has set himself to solve, are too vast for answer by one man. The marvel is that his imagination has been so fertile in suggesting new theories each time that he has had regretfully to abandon the old. In spite of the supreme difficulties of his task, Crile has succeeded beyond anyone else in suggesting methods of combating an entity which neither he nor others are able convincingly to explain. He is above all a man with a passionate belief in his cause. His intense enthusiasm has won him a host of converts and disciples. Yet those who hold themselves aloof from his influence will have little difficulty in finding faults in his work. His photographs, for instance, of exhausted tissue cells are either accepted as part of the faith or are gazed at with sceptical and agnostic eyes. "Where," the unbeliever asks, "are the detailed records of these countless experiments? How often has this particular experiment been performed? Is not such and such a histological appearance within the limits of the normal?" We are informed that upwards of 3,000 animals and men have been histologically examined. A life-work indeed!

Crile's detailed work is vulnerable, but his general kinetic theory of shock is extraordinarily ingenious and seductive. It has enabled him to elaborate and to perfect methods of preventing shock which will probably ensure the handing on of his name to posterity. With the knowledge that general inhalation anaesthesia does not prevent an animal from receiving subconscious painful impressions, and the knowledge that stimuli of sufficient number or intensity cause exhaustion and may cause death, Crile set himself to find a technique which would reduce the nocuous impulses to a minimum. This technique he now calls "Anociation," a handier word than the former "Anoci-association." Crile's *credo* is embodied in this passage:

"The one great exciting cause of surgical [operation] shock is the surgeon—every contact of his instrument with an unanaesthetized nerve-ending, nerve filament, or nerve-fibre;

[1] *Surgical Shock and the Shockless Operation through Anoci-Association.* By G. W. Crile, M.D., and W. E. Lower, M.D. Second edition of *Anoci-Association*, thoroughly revised and rewritten. Edited by Amy F. Rowland, B.S. Philadelphia and London: W. B. Saunders Co. 1920. (Roy. 8vo, pp. 272; 75 figures. 21s. net.)

every drop of blood which he sheds; every moment he requires the continuation of inhalation anaesthesia; every moment he exposes sensitive tissue to the air; every interference with adequate ventilation of the lung; every thrill of fear he introduces into his patient—each of these is an exciting cause of shock, and the combined result of all may be death."

The "anociative" technique requires no special apparatus; it is within the power of all surgeons to apply. We venture to assert that few who do employ Crile's methods will fail to gain greatly for their patients and themselves. Something of value has been added to surgery, and we are Professor Crile's (and Dr. Lower's) debtors.

There are no radical changes in this second edition, but there is a general improvement in the chapters describing individual operations. We note that urea hydrochloride is now used very cautiously and only on special occasions.

Dr. Geoffrey Marshall, some of whose charts are reproduced, is incorrectly referred to as Dr. Gregory Marshall.

ANTISEPSIS AND ASEPSIS.

DR. CHARLES SINGER of Oxford, lecturer in the history of medicine at University College, London, is editing a set of volumes which, under the general title "Medical Classics Series," is to be published by Messrs. John Bale, Sons, and Danielsson. The object of the series is to reproduce some of the most epoch-making contributions to medical science. Each volume will be complete in itself, and each will contain a brief note on the author's life. The first volume[2] consists of *Six Papers by Lord Lister*, selected by Sir RICKMAN GODLEE, who has written a short biography and added a few explanatory notes to the papers. The biography, as was to be expected, is very well done; in the course of it Sir Rickman Godlee takes occasion to discuss what he rightly calls the thorny subject of aseptic surgery, as opposed to antiseptic surgery. He points out that aseptic surgery, as it is now understood, was almost from the first Lister's ideal; he tried to adopt it as early as 1868 and on other later occasions, but he did not persist in the attempt because he thought that antiseptic surgery was equally efficient and more easily carried out. It is pointed out that the principle underlying the two methods is identical, the object of both being to prevent the access to a wound of pathogenic micro-organisms in such a condition or in such numbers that they have a chance of living and of propagating themselves. In the earliest days Lister thought he had succeeded in keeping germs out of wounds altogether, but afterwards it was shown that complete exclusion was rarely attained, was sometimes impossible, and not really essential. In rendering their applications free from germs aseptic surgeons trust more to heat and less to chemical substances than Lister did, but since the importance of the skin as the source of wound infection has been realized, antiseptics have been used both for the skin at the site of operation and for the surgeon's hands.

The volume contains six essays; the first the paper on the early stages of inflammation, communicated by Lister to the Royal Society in 1857; the last the address on the present position of antiseptic surgery which he delivered before the International Medical Congress in Berlin in 1890. Among other essays is Lister's report of the demonstrations of antiseptic surgery he gave before the British Medical Association at its annual meeting in Edinburgh in 1875. The volume is illustrated by a reproduction of a well known photograph of Lister when about 60, and of an early photograph of Lister and his wife; there is also a facsimile reproduction of a letter by Lister written in 1861 to his father.

THE SPHYGMOMETER IN PRACTICAL MEDICINE.

PROFESSOR W. RUSSELL of Edinburgh, who has written much on arterial disease in his monograph *Arterial Sclerosis, Hypertonus, and Blood Pressure*, at present out of print, as well as in numerous papers, now publishes, under the title *The Sphygmometer: Its Value in Practical Medicine*,[3] his George Alexander Gibson Memorial Lectures for 1920, appropriately dealing with a subject in which his late colleague took so much interest, and also eight papers that appeared between the years 1908 and 1917. These pages contain a clear exposition of very definite opinions based on many years of clinical observation. The view that the sphygmometer gives the true brachial blood pressure, and that 5 mm. Hg only need be allowed for the vessel wall, whatever its condition, is strongly opposed by the author, who has always contended that thickening of the arterial wall from sclerosis, from hypertonus, or from hypertonus in a sclerosed artery, is the important factor in sphygmometer readings. The sphygmometer is of great value in demonstrating the relaxation and contraction, or the play of tonus, in thickened arteries, and sphygmometer readings should not be regarded as providing an assured record in terms of "blood pressure." Another point that is firmly emphasized is that sclerosed arteries are not necessarily or even usually atheromatous, and that the sclerosed artery seldom, if ever, becomes a rigid tube. Arterio-sclerosis is defined as a uniform thickening of the middle coat of the arteries in their whole length, whereas atheroma occurs in patches and, like calcareous infiltration, is comparatively rare in the radial artery even of old people. Hypertonus is described as occurring both as a prolonged and as an oft-recurring increase of the normal degree of contraction of the arterial muscular coat which is physiologically called tonus; further, hypertonus, though raising the sphygmometric reading, implies a diminished quantity of blood in the vessel and a fall of the blood pressure inside it. Cases showing the association of hypertonus with migraine, cardiac distress, anginoid symptoms, excess in tobacco, and epileptoid attacks are given. Disordered gastric function may cause hypertonus, which is removed by purgation, and the importance of gastro-intestinal disturbance in the production of arterio-sclerosis is emphasized. Dr. James MacDougall is quoted to the effect that enlargement of the prostate occurs only or mainly in persons with well-marked arterio-sclerosis, and it would be interesting to have heard some discussion on the question whether there is any real relation between these two changes so common in advanced life, or whether the association is analogous to that of baldness and arterio-sclerosis.

PHARMACOGNOSY.

THE second edition of Dr. KRAEMER'S *Scientific and Applied Pharmacognosy*[4] follows the first after an interval of five years. The greater part of the book is devoted to descriptions of crude vegetable drugs arranged according to the natural relations of the plants from which they are derived, but a few of the more important animal products are also considered. The sources, constituents, and commoner impurities of each drug are fully treated and the literature is adequately cited. One of the more prominent features of the work, and especially of this edition, is the author's wide view of the scope of his subject. The implied definition of pharmacognosy as the study of raw materials and the products manufactured from them will be considered too inclusive by many, but the strongly expressed opinion that pharmacognosists must have at their command, and be able to apply practically, a number of widely different branches of science must be accepted. Not only is a sound general knowledge of such subjects as chemistry and botany needed; highly specialized departments of these also find application. Among the problems requiring the applications of plant physiology are the relations of soil and climatic conditions to the variations in the constituents of drugs, and we should be on firmer ground here if we knew more of the part played by alkaloids, glucosides, and the like in the economy of plants. In approaching the subject of the cultivation of medicinal plants we are confronted with the problems of hybridization and mutation. Systematic experiments in drug cultivation have received increased attention of late, especially in America, and the results so far obtained seem to show that soil and weather have relatively less influence upon the yield

[2] *Six Papers by Lord Lister.* With a Short Biography and Explanatory Notes by Sir Rickman J. Godlee, Bt., K.C.V.O., M.S. Medical Classics Series. 1921. London: John Bale, Sons, and Danielsson, Ltd. (Crown 8vo, pp. vii+194. 10s. net.)

[3] *The Sphygmometer: Its Value in Practical Medicine.* By William Russell, M.D., LL.D. London: Baillière, Tindall, and Cox. 1921. (Demy 8vo, pp. 157; 14 figures. 7s. 6d. net.)

[4] *Scientific and Applied Pharmacognosy.* Intended for the Use of Students in Pharmacy, as a Handbook for Pharmacists, and as a Reference Book for Food and Drug Analysts and Pharmacologists. By Henry Kraemer, Ph.D., etc. Second edition. New York: John Wiley and Sons, Inc. London: Chapman and Hall, Limited. 1920. (Med. 8vo, pp. 748; over 300 plates, comprising about 1,000 figures. 33s. net.)

of active principle than has the individuality of the plant; hence the best results have been obtained by seeking out the better individuals and propagating from these. By this method it has been found possible to increase considerably the yield of alkaloid given by such plants as belladonna. As a nation we cannot claim to have been particularly progressive in these matters, but the effort now being made to increase the area of cinchona plantation in India, with the object of rendering that country capable of supplying the whole of the British Empire with quinine, is a step in the right direction. We note that attempts are being made in America to standardize certain drugs by observing their toxic action on germinating seedlings.

Dr. Kraemer emphasizes the application of chemistry to micro-analysis and to the elucidation of the little understood fermentative and other changes which take place in the drying and maturing of drugs. Many new and important applications of physical and crystallographic methods are also cited. To the scientific equipment of the pharmacognosist as recommended by the author we would add a knowledge of zoology and animal physiology, in view of the increasing number of animal substances now being employed in medicine. The outcome may be that in pharmacognosy, as in many other subjects, the bulk of the advances of the future will result from the team work of specialists rather than the efforts of individual investigators. The volume before us is furnished with excellent and abundant illustrations, those dealing with microscopic structure being particularly good. The book is one of the best of its kind.

HUMAN ANATOMY.

NEW manuals of human anatomy are not uncommon, but Professor PITZMAN'S *Fundamentals of Human Anatomy*[5] deals with the subject in a manner which is, in many ways, original and deserves serious consideration at the present time, when the reconstruction of the medical curriculum is giving rise to much discussion. It is possible that, in the near future, less time will be devoted to the study of human anatomy in the pre-clinical period, although this may be balanced by more extended courses of applied anatomy, running throughout the clinical period of study. Should such a change come about, it would be found that most of the existing textbooks contain much more detail than it would be advisable for the student to attempt to absorb in the time at his disposal, and that a manual on similar lines to Professor Pitzman's would be essential.

The author rightly emphasizes the very intimate relations which exist between anatomy, physiology, pathology, and the clinical subjects, and expresses the belief that anatomy can be taught most efficiently by constant references to its applications. It may be admitted that the author's aims are in every way praiseworthy and deserving of support, but approval cannot so readily be accorded to the manner in which these aims have been carried out. It ought to be possible in a book of this size to include all facts of human anatomy which are likely to prove of value to the average practitioner in his daily work, but much of this information has been excluded. Particularly is this true of the central and peripheral nervous systems. It is unfortunate that this defect is not compensated for by the soundness of the teaching in other respects. The movements of the knee-joint and the functions of its crucial ligaments are not described in accordance with English views, and such statements as "the clavicle is bound down firmly . . . by the coraco-clavicular ligament" convey a quite erroneous impression of the function of that ligament.

When we come to the choice of particular examples to illustrate the applications of anatomy to medicine and surgery, there must always be a difference of opinion as to relative values, and it would be unfair to cavil at the examples selected. Such instructions for dissectors as are included are very brief, and a student dissecting his first "part" would not find them very helpful. It would have been wiser to have omitted the instructions altogether than to have included them as they stand.

Despite such criticisms as have been offered, the fact remains that the book is an endeavour to show that human anatomy, as taught in the pre-clinical period of medical study, can be made simpler, more generalized, and more helpful. At the same time, it must be remembered that such a method of teaching the subject can only prove satisfactory when it is supplemented by a series of courses on applied anatomy during the clinical period.

[5] *The Fundamentals of Human Anatomy.* By M. Pitzman, A.B., M.D. London: Henry Kimpton. 1920. (Med. 8vo, pp. 356; 101 figures, 24s. net.)

NOTES ON BOOKS.

THE late Sir CHARLES A. CAMERON, of whom an obituary notice appears this week at p. 405, was born as long ago as 1830. In his *Autobiography*,[6] which appeared a short while ago, there are many interesting stories and reminiscences told in a genial and breezy style. His earliest recollection was that of a very old woman who, eighty-eight years before, had seen part of the battle of Culloden (1746). Though born in Dublin, he belonged to the Locheil branch of the Clan Cameron, and there are several anecdotes of the amusing confusion that occasionally arose between him and his *alter ego*, as he called him, Dr. (now Sir) Charles Cameron, M.P. for the College Division of Glasgow. The author, after sixty-five years of dinner parties, formed the conclusion that such pleasant reunions were conducive to longevity. In 1852, when 22 years old, he became a professor of chemistry, ten years later he was elected public analyst, and in 1874 medical officer of health to the City of Dublin, a post that he held until his death. He had also been professor of chemistry to two other bodies in Dublin as well as for a time professor of anatomy to the Royal Hibernian Academy, of which he was an honorary member. The appreciation in which he was held is incidentally shown by the number of presentations made to him.

The first part of the *Kystoskopischer Atlas*,[7] produced by Dr. med. ERICH WOSSIDLO, is devoted to a description of various forms of cystoscope; the author apparently favours the Nitze instrument, and for catheterization of the ureters the special instrument of Rieglieb; other forms are not discussed. Following this is a brief description of the technique of cystoscopy; the remainder of the text deals with the various abnormal conditions which may be found in the bladder, with brief notes on their pathological anatomy, their etiology, diagnosis, and methods of treatment. The chief value of the work lies in a series of coloured plates (thirty-eight in all), each plate containing some four or five cystoscopic views. These illustrations are, on the whole, of a high order and cover a very large range of subjects.

It is not surprising that a second edition of Dr. C. PRICE-JONES'S handy and clearly written introduction to clinical haematology entitled *Blood Pictures*,[8] first published in 1917, has been called for. In a small space it gives the maximum amount of information for the interpretation of blood counts, and is accompanied by five admirable coloured plates, which should, together with the technical directions in the text, provide an invaluable guide to house-physicians and clinical clerks. The leucocytes are divided into the leucoid or granular, the lymphoid or non-granular, and abnormal cells, degenerated and immature, and there is a phylogenetic diagram of the blood cells facing a coloured plate of the marrow cells for comparison. Dr. Price-Jones points out that, broadly speaking, a leucoid type of blood is associated with a coccic infection, a lymphoid type of blood with a bacillary infection, and a lymphoid *plus* a large mononuclear type with a protozoal infection. Twenty blood counts are given, and their diagnostic significance are discussed in the light of an extensive experience. Arneth's count is not referred to by name, but the author remarks that a classification of the polymorphonuclear leucocytes based on the number of their nuclear divisions has little practical bearing. An appendix contains a summary of the author's recent work on the diurnal variations in the size of the red cells.

[6] *Autobiography of Sir Charles A. Cameron.* With an Introduction by the Right Hon. Sir James H. M. Campbell, Bt., P.C., Lord High Chancellor of Ireland. Dublin: Hodges, Figgis and Co. Belfast: Mullan and Son. London: Simpkin, Marshall, Hamilton, Kent and Co. 1920. (Demy 8vo, pp. 172; 15 illustrations. 7s. 6d.)

[7] *Kystoskopischer Atlas.* Ein Lehrbuch für Studierende und Aerzte. Von Dr. med. E. Wossidlo. Leipzig: W. Engelmann. 1921. (Demy 4to, pp. 80; 34 plates; 23 figures. M. 56.)

[8] *Blood Pictures: An Introduction to Clinical Haematology.* By Cecil Price-Jones, M.B.Lond. Second edition. Bristol: John Wright and Sons. 1920. (Demy 8vo, pp. 63; 5 plates; 3 figures. 6s. 6d. net.)

THE widow of Professor Cozzolino has recently presented to the oto-rhino-laryngological clinic of Naples the rich collection of anatomical and pathological specimens collected by her late husband.

THE FUTURE OF RESEARCH IN TROPICAL MEDICINE.

SIR LEONARD ROGERS, C.I.E., M.D., F.R.S., delivered his presidential address before the Section of Tropical Diseases and Parasitology of the Royal Society of Medicine on February 24th. After referring to the organization of the new Section, and the choice of its title to prevent confusion with the earlier established Society of Tropical Medicine and Hygiene, and to the opportune bequest to the Royal Society of Medicine of the very valuable Chalmers library of tropical medicine, Sir Leonard Rogers said:

I wish to take advantage of the present opportunity to say a few words on the future of research in tropical medicine mainly from the point of view of what this country, and especially this, the wealthiest city of the world—much of whose prosperity is derived so largely from trade with tropical and sub-tropical countries—can and should do for the advancement of what may safely be called the most rapidly progressing and life-saving branch of medical science. We all know the great part the Schools of Tropical Medicine of London and Liverpool have played, both in training so many post-graduates and fitting them to undertake researches in various tropical countries with most beneficial results, as illustrated, for example, by the work of Castellani in Ceylon; and also in sending numerous research workers abroad for limited periods to tackle various problems, such as the pioneer work of Dutton and Todd from Liverpool in the dark continent of Africa; Manson-Bahr's all too short expeditions to study dysenteries in Fiji and sprue in Ceylon, and Leiper's brilliant solution of the life-history of bilharzial parasites in Egypt, both from the London School of Tropical Medicine, to mention only a very few.

While fully admitting the value of the work done by such brief expeditions of research workers to tropical countries, my own work not unnaturally leads me to consider whether the time has not come to modify to some extent the policy hitherto pursued by our English tropical schools, which is also that of the Tropical Diseases Committee of the Royal Society, so fully justified in the past by the brilliant researches of Sir David Bruce and his fellow workers at the very serious problem of the spread of sleeping sickness in Africa with the opening up of trade routes. Any value my own researches may have is solely due to my good fortune in being able to carry out long-continued and patient investigations in a tropical country in a laboratory in the closest possible association with a wealth of clinical material at the Calcutta Medical College Hospital with its 660 beds, for the last twenty years, with three intervals of a few months' leave home. I was thus led to the conclusion that Calcutta presents the finest opportunities for a great school and research laboratories of tropical medicine in the world, and I have devoted much time during the last ten years to organizing such an institution, which has already commenced research work, and will by next October be fully staffed for teaching as well. To this institution a hygiene section, for which the laboratory accommodation is already provided, will be added as soon as final sanction is obtained, when the services of ten Government professors will be available with about three-fourths of their time for research. Further, the response to an appeal I issued several years ago for funds to build a special hospital for 116 beds for tropical diseases and to support additional research workers has been so liberal that at the present time, at the official rate of exchange (which unfortunately is at present considerably over the market rate), over £100,000 has been subscribed, together with such large annual contributions that, after building and equipping the hospital, an income of £12,000 a year is already assured for research.

The largest contributions to the hospital have come from Indian rajahs and merchants, and those for research from English business men and firms, including very liberal support from Sir David Yule and Sir Dorab Tata. Seven whole-time research appointments, two of which are held by Indian research scholars, are being financed from this fund under a committee of medical men. As each worker has one or more qualified Indian assistants, the total staff will number forty-two, while the completed laboratories consist of four floors, with 220 ft. of north light, connected by a small foot-bridge with my former laboratory and museum, giving a total north front of 400 ft. I mention these facts to show what Calcutta has done for tropical medicine, and will only add that in my appeal I asked for money as a business proposition, and was able to persuade many of the donors that it would pay them to give money to investigate the tropical diseases such as ankylostomiasis, which so severely handicapped their labour forces. Another school on similar lines has also been organized in Bombay by my friend Lieut.-Colonel Glen Liston, I.M.S., which, together with the four hill-top laboratories of the Bacteriological Department of the Indian Medical Service and the Pathological Laboratories of the Medical Colleges, will place India in the forefront of research in tropical medicine.

Having thus been privileged to have a share in the organization of medical research work in India on practical lines, with the closest possible relationship between clinical and pathological work—an important point which, I venture to think, is not always sufficiently borne in mind in this country—I cannot help inquiring whether sufficient provision for similar work has yet been made in other British tropical possessions, and, if not, what steps are necessary to remedy such a serious deficiency. Something has, of course, been done in the last two decades, with practical results which should surely lead to world-wide further efforts in this direction, such as the discovery of the cause and means of prevention of beri-beri in the Malay States, where the Kuala Lumpur laboratory has furnished such good work; the Wellcome Laboratory of Khartoum under Balfour, from which town Christopherson's tartar emetic cure of bilharzial disease has emanated; the valuable work of the Queensland laboratory under Breinl, and that of Macfie in West Africa, where the Sir Alfred Jones Tropical Laboratory is being built at Sierra Leone. But what are they among so many, save as crying appeals to the wealthy to emulate the example of such practical philanthropists as Mr. Wellcome and Sir Alfred Jones? I understand that such an important colony as British East Africa (to mention only one striking example), where white men can flourish and many of our out-of-work soldiers might well find a livelihood with some initial help from Government, has neither laboratory nor research worker, although the neighbouring Uganda Protectorate is slightly better off.

A few months ago I received an invitation to join an influential Committee for the Prevention of Tropical Diseases, but on learning from their circular that they proposed to spend £30,000 on a single expedition to a very small and rather healthy (because malaria-free) West Indian island, I felt obliged to decline the invitation as I could not agree with such a policy. But I intimated that should they at any time alter their policy to one of organizing permanent research laboratories in various British tropical possessions I would gladly do anything I could to help them, and that is the policy I now desire to put forward for the consideration of those interested in the progress of tropical medicine. The Liverpool school have already given a lead in the right direction by establishing research laboratories at both Sierra Leone and at Manaos, in Brazil, and I trust that the much more wealthy City of London will not lag behind in such practical work, but will find liberal sums to enable the London School of Tropical Medicine, if they approve of the policy I suggest, to found research laboratories in British East Africa and other British tropical countries which are at present without such vitally important institutions. If money is forthcoming, and the support of the Colonial Office can be obtained, I would suggest that annual contributions towards the support of a research worker for a limited number of years should be offered to selected British colonies on condition that the local authorities supplied a small and unpretentious laboratory to start with immediately adjacent to the largest available hospital, and I have no doubt whatever that, after five years' experience of the benefits derived from it, they will be only too glad to grant it full permanent support, thus setting free the home grant for similar use in some other country. It should be a condition of the grant that the organizing committee should have a say in the appointment of the investigator, to ensure the right man being obtained for the critical first five years, which should, I suggest, be the shortest time any research worker should go abroad. This plan would in time assure all important British tropical possessions obtaining permanent laboratories and research workers, while it will still be possible, and occasionally advisable, to send temporary expeditions of specially qualified investigators to tackle some urgent problem due to an epidemic disease or an especially technical problem such as schistosomiasis was but a short time ago. The old policy of trusting entirely to temporary inquiries, with heavy costs for equipment and passages, and leaving no permanent organization behind the pioneers to carry on the work they have begun, should be abandoned as far as possible.

I trust I have made it quite clear that I am not criticizing the earlier policy, which was doubtless correct in the first stages of the evolution of our home schools of

tropical medicine, but I do wish to suggest, in the light of my long Indian experience, that the time has come for the further advance I have indicated. Indeed, I think this has been necessitated by the very success of recent researches in this field, including all the work done on dysenteries during the war, for now so many of the simpler problems have been solved the remaining problems of tropical medicine will require much more prolonged and detailed inquiries, including team work, such as is being provided for in the Calcutta school, the liberal public support of which would serve as a stimulating example to London philanthropists, and especially to those whose firms or companies trade with tropical countries. Their young assistants have to live in such climates exposed to unnecessary dangers to their health from the lack of the safeguards provided by research laboratories, and I appeal to their employers for support for the proposals I have ventured to bring forward.

PREVENTION OF VENEREAL DISEASE.

AT a conference on the prevention of venereal disease, under the chairmanship of Lord ASKWITH, on March 1st, Dr. MEARNS FRASER, M.O.H. for Portsmouth, proposed:

> "That, in view of the terrible effects of venereal diseases on the health of the nation, and especially because of their effects upon women and children, there is urgent need for health authorities to institute active measures to protect the inhabitants of their districts against these diseases. Of these measures, by far the most important is education of the public as to the dangers of venereal diseases, as to the manner in which they are spread, and, above all, education in the methods of immediate self-disinfection, by which venereal diseases can be largely prevented."

He said that the Society for the Prevention of Venereal Disease was anxious to induce local authorities to make known the methods of self-disinfection to the public. He considered the time was ripe for local authorities to take action on the lines adopted by Portsmouth. The resolution was seconded by Dr. CHARLES SAUNDERS, M.O.H. for West Ham, who said that there were resolutions on the minutes of the West Ham Council approving of the education of the people in immediate self-disinfection.

Dr. E. W. HOPE, M.O.H. for Liverpool, stated that he was heartily in accord with the views expressed by Dr. Fraser, and gathered that, when emphasizing this aspect of the question, other aspects would not be lost sight of. He thought that those who raised objections from the moral standpoint seemed to forget that no obstacles were being placed in their way.

The MAYOR OF PORTSMOUTH said that the inhabitants of Portsmouth had all now come round to Dr. Fraser's way of thinking, and he had had all the support which any medical officer of health could wish for on this subject.

Dr. BOND, M.O.H. for Holborn, said that Holborn was the first London borough which had adopted the method advocated by the Society for the Prevention of Venereal Disease; he considered this method of education exceedingly simple and very inexpensive. Dr. HOLROYD, M.O.H. for Chatham, said that when he brought the question of education and immediate self-disinfection before his Health Committee it was unanimously supported by them, and there was not a single dissentient, nor were any dissentient opinions expressed in the town.

Mr. THOMPSON, Chairman of the Health Committee, Liverpool, said that during the past year they had had 78,000 attendances at the Liverpool venereal clinics, and emphasized the necessity for continuity of treatment. Mr. WHITWORTH, Chairman of the Bedfordshire Venereal Committee, considered it necessary to amend the Venereal Disease Act, 1917, so as to enable anyone to go to a chemist and ask for what he wanted.

The resolution was supported also by Dr. J. B. HOWELL, M.O.H. for Hammersmith, and Dr. VEITCH CLARK, M.O.H. for Croydon.

The CHAIRMAN then submitted the following addendum to the resolution:

> "Resolved further that this resolution and opinion be forwarded to health authorities throughout the United Kingdom, with the request that they take the subject at once into consideration."

With this addition the resolution was then put to the meeting and carried unanimously.

Lord WILLOUGHBY DE BROKE, President of the Society for the Prevention of Venereal Disease, moved a vote of thanks to Lord and Lady Askwith. Dr. WANSEY BAYLY, the Honorary Secretary, who seconded, said that he had just received a telegram from Dr. J. Priestley, M.O.H. for Lambeth, expressing cordial support of the resolution, and that Colonel F. E. Fremantle, M.P., President of the Society of Medical Officers of Health, had intended to be present, unless prevented by parliamentary duties.

OWING to the increase of poverty in Austria, an insurance society has been founded at Vienna for members of the middle classes under the name of the "Yellow Cross." Those insured have the right to choose their doctor, and in operation cases their surgeon, as well as their hospital or nursing home.

MOTOR NOTES FOR MEDICAL MEN.

BY H. MASSAC BUIST.

MINISTERIAL AND COMMERCIAL ASPECTS.

IT is not good news that the Ministry of Transport, which has scarcely been got into working order, is to lose its head, Sir Eric Geddes, next summer. Whether the Ministry itself is to lapse is apparently still undecided. In all likelihood its functions will be absorbed by one of the older ministries. This at least is certain, that once a Government has regarded the question of internal transport as a national affair it will not be allowed to revert to the condition in which it was the sport of local authorities. All that motor owners and builders can do in the meantime is to be forewarned that a very sharp look-out will have to be kept on the money raised from them by way of taxation. Unless we see to it very carefully an increasing portion of the net sum raised from motor taxes will begin to be diverted to other ends. Already there are signs that at no distant date the bulk of the motorists' money spent on the roads will not be employed to give us twentieth-century highways and byways for twentieth-century traffic, but merely to patch up and keep going obsolete systems; in other words, to pursue the work of maintaining unsuitable road types which, among other things, are enormously wasteful when employed for latter-day traffic. In the current year far too small a proportion of the money is being spent on that work of permanent road improvement which should be the main objective of all endeavour. There are indications that that work may be so limited in ultimate scope that, in relatively a few years, all that will be held necessary will have been accomplished in that connexion; apparently the idea is that the total amount of funds then supplied yearly by motorists by way of taxation will be employed solely for maintaining the highways and not to remodel them. This should not be allowed. Among the points that concern motorists and are under consideration by the Government at the moment, is the question of the left-side drive. It has been condemned by many coroners throughout the country as being dangerous. It cannot be said that anything has happened this year which has not tended to confirm that danger, particularly as concerns the use of left-side driven vehicles wherein the driver is enclosed by covered coachwork. The draft of the promised new bill to deal with speed on the highroads and so on will either undergo modification before introduction to the House, or it will prove a very unpopular measure there.

PRICES.

The first motoring development of the year has been the inevitable and long-expected campaign of price-cutting, chiefly on the part of those who have produced car types which are little better than furbished up pre-war models. This move has been countered by those who produce cars for which there is a demand. Such firms have given undertakings to the effect that, should there be any fall in the price of their vehicles as between now and June or July, as the case may be, any buyers placing orders to-day will receive a rebate of any such difference in price. But it must be understood clearly that it is impossible for the cars which are in most demand to be sold at lower prices than are ruling. Already the price of many of them is too low from the point of view of the accountants of the manufacturers. Moreover, where genuine post-war designs are carried out with post-war material and by post war manufacturing methods it is not possible to reduce prices, though these may appear dear. The reason is that such designs call for very expensive methods of production with the view to making motoring more economical. This was admirably illustrated last week when Vickers' motor manufacturing concern, the Wolseley Company, invited the Press to inspect its works after an interval of seven years. During that period the original shops at Adderley Park, Birmingham, have been expanded to a floor space of thirty-three acres, and entirely new works for the production of the 10-h.p. four-cylinder, overhead valve engined, three speed Wolseley (*ex*-Stellite) car have been set up with a floor space of sixty-six acres at Ward End, a couple of miles away from the parent shops. Though at the first glance the machines are apparently not cheap, a consideration of

the quality and features embodied in them reveals that they can compare favourably with the cheapest home or foreign-produced vehicle under the heading of bare cost at the end of two years. That is to say, real post-war designing ensures a big economy in running and maintenance costs.

REAL MOTORING ECONOMY.

In the case of the 10-h.p. car the tax is about £11 a year, yet each engine has to pass a bench test of 24-25 h.p., and with such a vehicle it is possible, without ever exceeding forty miles an hour, to average thirty-two miles an hour from point to point in long runs when driving in an ordinarily cautious way and without "hunting" the car. These engines are guaranteed to give thirty miles to the gallon of fuel, and I make bold to foretell that within six weeks the cars will be selling with a guarantee that the engine will accomplish forty miles to the gallon. Thus the owner saves both in petrol, which is costly, and in engine tax, which is a substitute for the petrol tax obtaining last year. How this is done may be illustrated by taking the mean effective pressure of this engine compared with the average of standardized type. The mean effective pressure means the motor fuel supplied to the engine and turned into horse-power. In the case of the popular American type of car a mean effective pressure figure of 78 is about the average, and 85 would be a fair figure for most British and Continental standard cars, whereas in the case of the Wolseley post-war engine it is 110, a figure better than was obtained with the former cars specially built for the Tourist Trophy Races before the war. It is, however, one thing to aim at employing a much better engine—in which connexion the firm has just standardized battery ignition sets for these types—and quite another matter to evolve such an entirely new chassis as shall represent a car which is 100 per cent. post-war design, instead of merely placing a post-war type of engine in a pre-war chassis. The Wolseley coachwork, as well as the chassis, is made on new lines. In this little car the back axle and the engine form in effect the frame of the vehicle. Another point about which the non-technical are often puzzled is how a machine having quarter elliptic front springs and no radius rods would fare in the event of the main leaf of a front spring breaking. A glance at the construction employed will reveal that there is a short dummy leaf with an eyelet hole underneath the main spring leaf. This dummy leaf does no work when the car is in normal condition. But the eyelet hole of this abbreviated dummy undermost leaf is attached to the shortest and uppermost spring leaf proper by a shackle. Thus it is possible to saw through the leaves of the spring—I doubt if they have ever been broken, for they are proportionately strong—and still drive at forty miles an hour with perfect safety with a spring thus artificially broken. This simple detail is the subject matter of a master patent, a fact of which some rival manufacturers appear to be unaware, in that they are standardizing this so simple and effective solution of a very difficult engineering problem.

THE SCIENTIFIC USE OF PLANT.

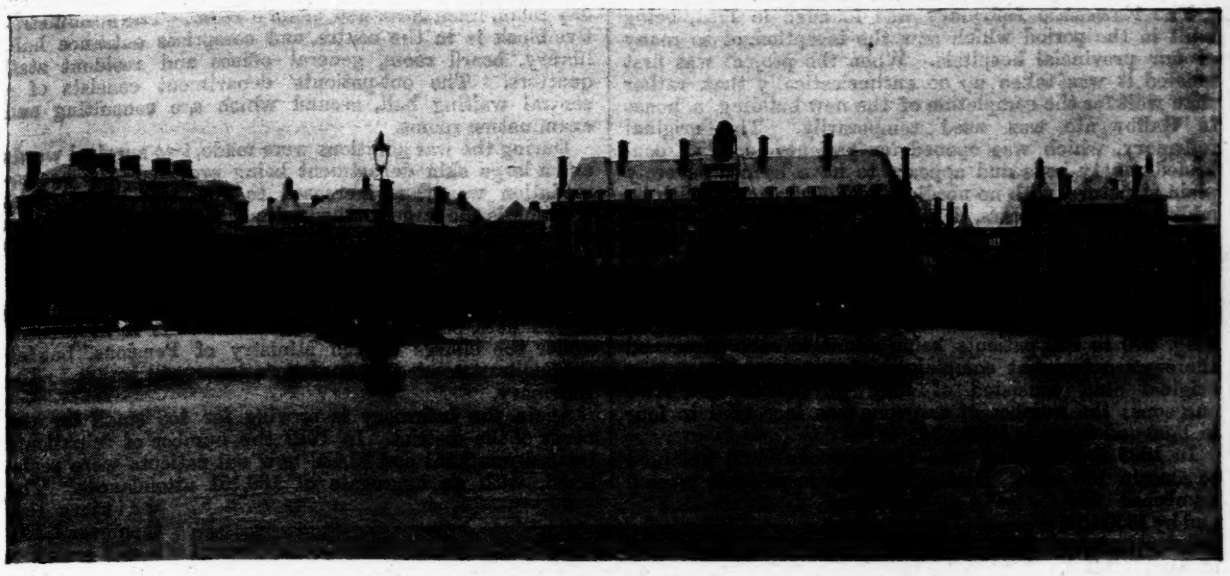
This car, together with the 15-h.p. £16 tax model, the engine of which is tested to give 45 to 46 h.p., is of particular interest to the medical man by reason of the low running costs. The springing system common to both results in a set of tyres being good for at least a year's work under average conditions. The economy, without sacrifice of the distinctive qualities of rapid acceleration and good hill-climbing, is accounted for mainly by a combination of three factors. The first is the even torque of the engine at all speeds and loads, for these are very high-grade engineering constructions; the second is the smoothness of the clutch and of the worm drive; and the third, of course, is the exploitation of the special form of springing which is perpetually plangent, and with which it is impossible to get a jar, the most that can be experienced being a plunge. The wheels follow the contour of the road, so do not jump and spin, with consequent grinding. Throughout the engine and the chassis of both types workmanship to exceedingly close limits is made possible by the war experience, which, in part, is continued by the Wolseley production of screw gauges, not merely for its own works but practically for the supply of the entire British industry and for export. Every one of those gauges is made by a girl at a machine a little larger than a sewing machine, yet every gauge so produced has to pass the National Physical Laboratory tests, which require it to be accurate to within one ten thousandth part of an inch in each of seven elements in which it is measured photographically. In short, there is here no manufacturing of cars by hand. Every part of the work is sectionized. There are two laboratories on the establishment, for, apart from that concerned with experimental work, every piece of raw material used is tested. Judged by the pre-war scale of British motor production the experimental department itself would be quite a considerable factory. Practically every make of car in a range between 8 h.p. and 50 h.p. is tested, so that the data obtained in connexion with it are available in comparative form.

100 PER CENT. EFFICIENCY.

The firm does its own stamping. In these vast factories there are made not merely the aluminium, but the steel castings for cylinders, and for every part of a car which is ordinarily bought from outside, including, for example, the back axle details. By the multi-jig principle it is possible to machine a couple of dozen crankshafts in synchronism, to the gain of absolute standardization as well as of great economy, because by that means 100 per cent. cutter efficiency is obtained; that is to say, instead of only a twenty-fourth of the total movement, every inch of the travel of the machine under the tool produces cutting. In the huge pressing department approaching completion at a cost of £120,000 odd it will be possible to reduce by one-tenth the combined cost of materials and labour for a set of wings for a car. This plant, besides, will press under pans for chassis, body panels, and so forth. A track assembly system is available when wanted. But the firm has not yet accelerated to full time, though it is turning out 150 cars a week already, for every one of which a retail purchaser has been secured by one of the firm's agents. The delay in the production programme is due to the disastrous effects of the twenty-two weeks' moulders' strike, which cost a full years' output, because such a dislocation is always of much longer duration than the prime cause of it. The capacity of the Ward End works for turning out the 10-h.p. Wolseley car is 10,000 cars a year. If a night shift is put on in the machine shop, between the two factories it will be possible to turn out, among the three models, 24,000 cars a year; there is a 20-h.p. six-cylinder side-valve engined type. The normal day shift production of the two factories is 12,000 cars. The organization is such that output can be accelerated very rapidly now. On the other hand, it is not necessary to accelerate beyond the present output should the Government be able to do nothing in regard to the exchange situation, which is handicapping foreign trade.

The 10-h.p. model is made with a two-seater coupé body as a permanently closed car, which is, nevertheless, airy in warm weather. A two-seater model on the same type of chassis is furnished with Cape cart hood elaborated on such a scheme that, in bad weather, a doctor can make a completely and effectively rainproof motor-carriage of it. The firm announces that there can be no price reduction this year; but it undertakes to prove by figures that its car can compete favourably on combined purchase and running cost on a two years' running basis with any vehicles in the market. Of course, at the end of two years a machine made to such very fine limits of materials of such quality would be practically none the worse for wear; whereas the life of most cheap-for-their-size cars is brief. An interesting sidelight is furnished by the fact that one of the largest and foremost engineering houses in Japan has taken out a licence to make these cars, the patent laws of that country rendering that the only means of safeguarding such unique constitutional features.

As illustrating incidentally how closely the prices of the highest classes of small cars are coming to those of the best quality motor bicycle and side-car outfits attention may be drawn to the announcement that the Rover Company has reduced the price of the 8-h.p. twin-cylinder air-cooled Rover car complete from £300 to 250 guineas. This is a vehicle with motor cycle scale of tyre upkeep and fuel consumption, yet with the advantages of a car from the points of view of sitting accommodation, protection against the elements, the possession of three forward speeds, worm drive, plate clutch, and plangent quarter elliptic fore and aft springs.



The Royal Victoria Infirmary, Newcastle-upon-Tyne. (Photograph taken from the Leazes Park.)

EIGHTY-NINTH ANNUAL MEETING
of the
British Medical Association,
NEWCASTLE-UPON-TYNE, 1921.

SOME OF THE TOWN'S INSTITUTIONS.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.

A SCHOOL of medicine has existed in Newcastle since 1832, when the Newcastle-on-Tyne School of Medicine and Surgery was formed by a few local medical men, with the brothers Fife as prime movers. There were at first only nine students, and the lectures were given in a room in Bell's Court, Pilgrim Street. After two years the founders, feeling the need of better accommodation, and emboldened by the success of their first two sessions, rented the Hall of the Worshipful Company of Barber-Surgeons together with Wax and Tallow Chandlers, in the Manors. The Hall itself was destined for the museum, and the space below was partitioned off and fitted up into a lecture room, a chemistry and materia medica room, and a dissecting room.

Down to 1851 the school grew and prospered; then, owing to violent dissensions among the staff, two rival schools were started. That of the majority in 1852 became associated with the University of Durham, and was known as "The Newcastle-on-Tyne College of Medicine in connexion with the University of Durham." Students were now enabled to proceed, first, to a licence in Medicine, and secondly, later, to the degrees of Bachelor and Doctor of Medicine. In the previous year the school had been recognized by the Society of Apothecaries of London and by the Royal College of Surgeons of England. By this time the old building at the Manors had to be demolished to make way for the extension of the North-Eastern Railway. New premises were built in the gardens of Westmorland House, near the Library of the Literary and Philosophical Society; this became known as the Orchard Street School of Medicine.

The minority of the lecturers formed a school entitled "The Newcastle-upon-Tyne College of Medicine and Practical Science," which was housed in the new Barber-Surgeons' Hall, still to be seen at the top of Westmorland Street. After working separately for some six years a reconciliation was brought about, and the two schools amalgamated to their mutual benefit. The incident of the disruption would probably have long been forgotten had the memory not been perpetuated in the humorously satirical ballad entitled, "The Knichts of St. John and the Cross, or the Raid o' the Auld Musee," which records in some fifty stanzas how the "minority" surreptitiously removed some of the best specimens from the stable in which the "majority" had temporarily housed the museum. In 1870 a still closer union was formed with the University, and the College has since been known as "The University of Durham College of Medicine."

Owing to the further exigencies of railway development, Orchard Street had to be vacated in 1889, and the present college in Northumberland Road, a photograph of which is here reproduced (p. 392), was opened.

In 1906 the building was greatly enlarged and improved by the addition of the Heath Wing, which was erected from funds left by Dr. George Yeoman Heath, who was President of the College from 1874 until his death in 1892. During the last twenty years the work of the College has greatly increased, and the number of students has gone up from an average of 200 to no less than 433 at the present time, and of this number seventy are women.

ARMSTRONG COLLEGE.

The subjects of chemistry, physics, and biology are taught at Armstrong College, which, with the College of Medicine, goes to form the "Newcastle Division" of the University of Durham. This institution was founded in 1871 as a science college, but its scope has been greatly extended, and it now includes faculties of arts and of commerce.

The work of the College is conducted in twenty-three teaching departments, of which perhaps pure Science, Mining, and Agriculture are the most important. In association with the latter is the experimental station at Cockle Park, and the practical Forestry Department at Chopwell Woods. As befits a shipbuilding district, the College contains an important department of Naval Architecture, one of the three which exist in the country. The Art Department is well attended, the work being carried on in the King Edward VII School of Art. The Department of Commerce is a comparatively recent addition, but is becoming increasingly important. In 1920 the number of students on the books of the College was 1,174, and many had to be refused admission. Unfortunately, both the University Colleges find themselves in sore need of additional funds, and they are at present appealing to the public for half a million pounds; of this sum about £150,000 has so far been subscribed or promised.

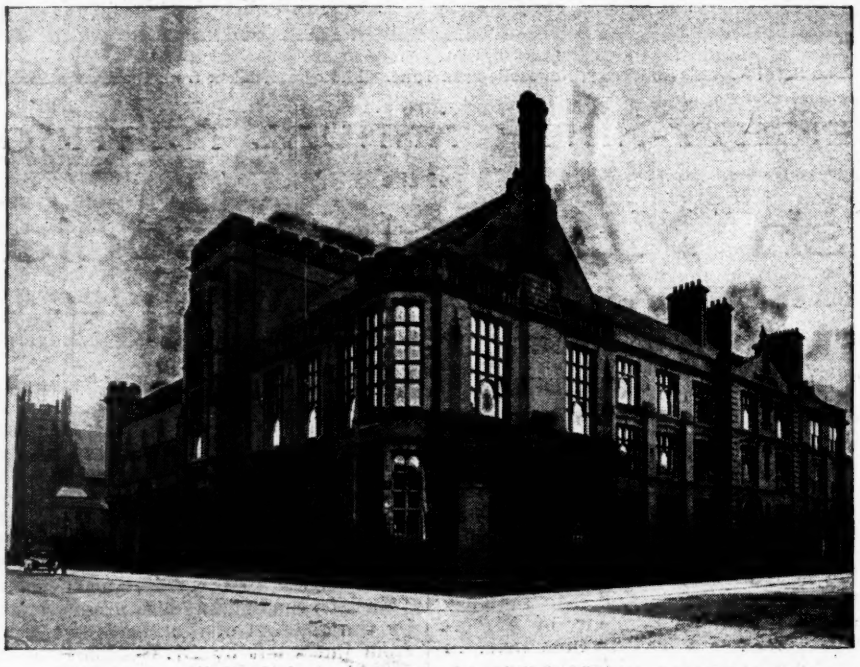
THE ROYAL VICTORIA INFIRMARY.

The Newcastle Infirmary was founded in 1751, being built in the period which saw the inception of so many of our provincial hospitals. When the project was first mooted it was taken up so enthusiastically that, rather than wait for the completion of the new building, a house in Gallowgate was used temporarily. The original infirmary, which was opened for patients in 1753, contained ninety beds and appears to have been a severely plain structure, with no needless ornamentation. With its additions of later years, the building still stands near the Central Railway Station:

> Grim Lazaretto, deserted and still,
> The birthplace and cradle of surgical skill!

The accommodation was fully utilized from the beginning, 500 to 600 patients being admitted each year, and there were frequent complaints of overcrowding. The original staff consisted of four physicians and two surgeons; the number of surgeons was increased to four in 1760 and to six in 1920.

In 1803 the building was reconstructed and enlarged to contain 100 beds. During 1801 the in-patients treated numbered 643 and by 1830 this number had increased to 1,000, so that the extension was not keeping pace with the needs of the district, and overcrowding was still prevalent; accordingly, 22 beds were added by the addition of a third story; the relief of pressure thus obtained was, however, of short duration, and in 1850 a new wing was begun to provide 144 more beds. Three years later epidemics of typhus and cholera broke out in Newcastle and the new wards were brought into use whilst the wing was still in an unfinished state. The in patients rose to 1,679 annually, but the increase was greatest amongst "casuals"; their number rose to 16,000 in 1870. Fifty more beds were added in 1885, and about this date the constitution was altered in several ways. The Infirmary was made free—that is, letters of recommendation were no longer required for admission; the House Committee and medical staff were amalgamated, and workmen governors were appointed from those works which contributed to the funds.



The University of Durham College of Medicine, Northumberland Road, Newcastle-upon-Tyne.

In the last years of the last century it became obvious that the building was unable to cope with the needs of the district; overcrowding was often acute. Several plans were brought forward for a new building, and finally, in 1896, a public subscription was opened for this purpose to commemorate the Diamond Jubilee of Queen Victoria. Plans were prepared and a site selected after some delay, and with this public subscription, together with two munificent gifts of £100,000 each from the late Mr. John Hall and Lord Armstrong, the present building was erected. The foundation stone was laid in 1900 by H.R.H. the Prince of Wales, and in 1906 the building was formally opened by him when King Edward VII. The hospital is on the pavilion system, with original accommodation for 400 patients. A central corridor traverses the building, which has the Nurses' Home (for 100 nurses) at its upper end and the out-patient department at its lower. Leading off this corridor are ten pavilions, of two stories, making twenty wards, each a complete unit, with ward, kitchen, scullery, day room, linen room and sister's room. The administrative block is in the centre, and comprises entrance hall, library, board room, general offices and resident staff quarters. The out-patients' department consists of a central waiting hall, around which are consulting and examination rooms.

During the war additions were made, two surgical wards and a large skin department being provided—the accommodation was thus increased to 550 beds. The latest addition is the large Orthopaedic Hospital, which adjoins the Infirmary, and which at present, with huts, contains 500 beds more. This was built mainly by public subscription, but with assistance from grants from the Government, Red Cross Society, and relief funds for the treatment of "soldiers, pensioners, and civilians." It is at present under the charge of the Ministry of Pensions, but at the expiration of the Ministry's lease will revert to the Infirmary.

Again the Infirmary is proving far too small for the needs of the district. In 1919 the number of in-patients treated was 9,551 and 72,429 new out-patients were registered, with an aggregate of 160,151 attendances. The waiting list, then over 1,300, is still growing, although the beds are being used to their utmost capacity.

Among the other medical institutions in the town are the Children's Hospital, the Lying-in Hospital, the Eye Infirmary, the Throat and Ear Hospital, the Skin Hospital, and the Dispensary.

LITERARY AND PHILOSOPHICAL SOCIETY.

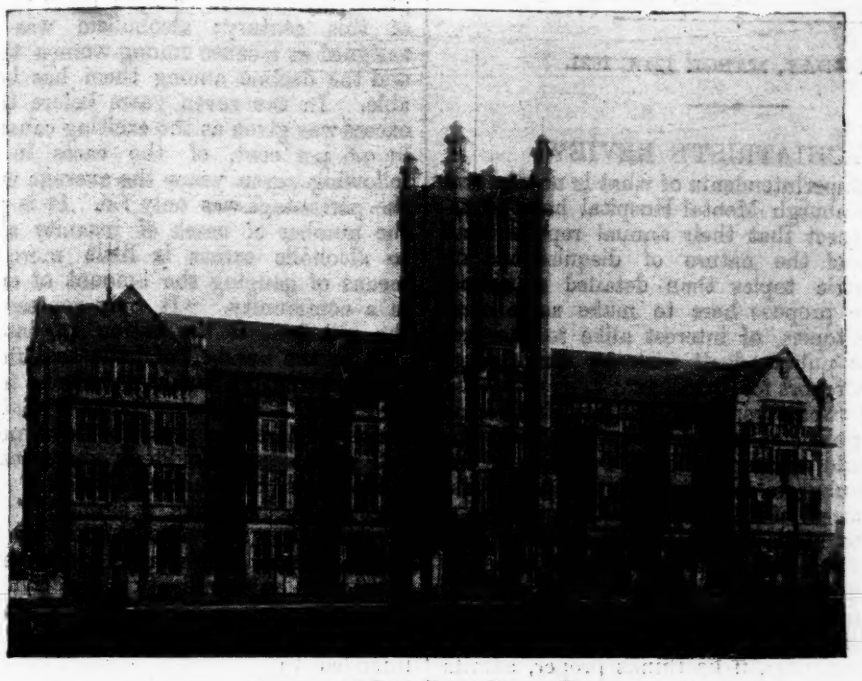
This institution, familiarly known as the "Lit. and Phil.," appeals to a wide range of taste and attainment in matters intellectual. Lectures by specialists are provided on all sorts of subjects, including some systematic educational courses. Occasionally lectures in French and German are given. But its crowning usefulness and popularity lies in its large library, which has been accumulating since its foundation, and which ranges from recondite volumes in literature and science to the most ephemeral fiction. Members roam at will among the hundreds of well-filled shelves and pick and choose whatever they wish to peruse in the comfortable reading room. The leading magazines and periodicals are also provided, and all may be borrowed under suitable regulations. The Society was founded in 1793, and the present buildings were opened in 1825. But previous to the definite foundation of this Society, there existed a society which may be looked on as a tentative effort towards the goal subsequently reached. The Philosophical Society, which was founded in 1775 and devoted itself to discussions, had but a brief existence. One of its members, Thomas Spence, was much in evidence in his day. He was a schoolmaster who advocated communal property in land, and invented a phonetic system of spelling, of which the following is a specimen:

> "It may hile perpleks a karlls redir ov nu karaktirs too disifir the tru sens thereov: tho it shud be eze enuf too no it bi a litil aplekashin and praktis."

A fighting man was Spence, and having violently upbraided Thomas Bewick for not supporting him in a

debate, he received a good cudgelling from the famous engraver. He subsequently removed to London, where he was frequently in conflict with authority.

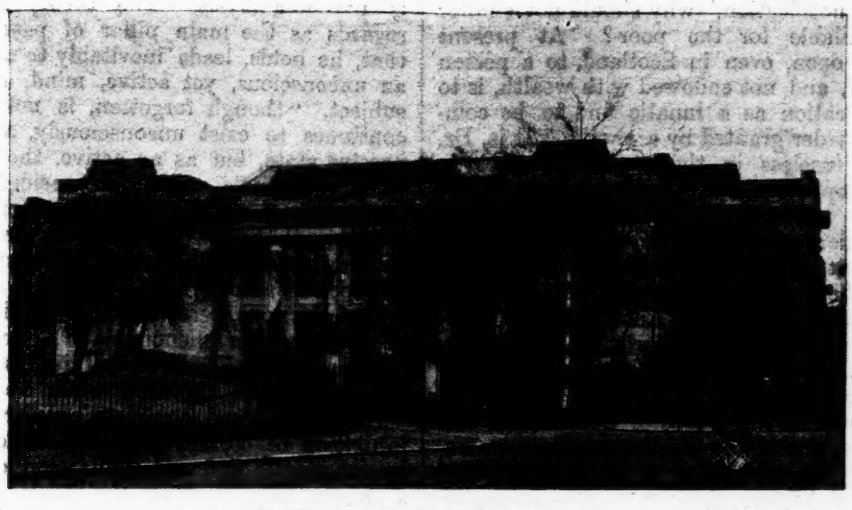
The idea of founding a medical school in Newcastle first originated with a distinguished member of the "Lit. and Phil," Dr. Greenhow, who endeavoured to arouse interest in the project by reading a paper before the Society dealing with the matter as early as 1831.



Armstrong College, Newcastle-upon-Tyne

THE HANCOCK MUSEUM.

This museum, owned and maintained by the Natural History Society of Northumberland, Durham and Newcastle-upon-Tyne, is housed in an imposing building finely situated to the north of Barras Bridge, a centre with which the members attending the Annual Meeting will quickly become familiar. Of its contents, more particularly interesting are the Hancock collection of birds; Thomas Bold's Northumbrian insects; the herbarium of N. J. Winch; and collections of fossils from the local coal measures. The ethnological collection is notable not so much for its great extent as the unique interest of many of the objects, some of them brought back by Captain Cook's expeditions, and therefore before the age of faking and wholesale imitation. The Museum also contains a splendid collection of the original drawings and woodcuts of Thomas Bewick, the famous Newcastle engraver.



The Hancock Natural History Museum.

Those who are interested will find in the Free Library in New Bridge Street, and adjoining the Laing Art Gallery, a unique collection of Bewicksoniana known as the Pease bequest. The site of the house in which the engraver lived and worked is marked by a bust in the wall of Milburn House, adjoining the south side of St. Nicholas's Churchyard.

THE LAING ART GALLERY.

This gallery, in Higham Place, three minutes' walk from the College of Medicine, is a recent addition to the attractions of the city. Due to the munificence of the late Mr. Alexander Laing, it fills a want that had been long experienced. The building, which is in the Renaissance style, reflects the greatest credit on the architects, but from the outside cannot be adequately appreciated owing to the narrowness of the street. The interior is appropriate to its purpose, and the visitor at once feels himself in the fitting atmosphere for a picture gallery. Already the permanent collection is quite considerable, and excellent examples of most of the leading modern painters are to be found on its walls. To mention a few—Edward Armitage, Frank Brangwyn, H. P. Briggs, A. K. Brown, George Clausen, H. H. Emmerson, Stanhope A. Forbes, G. C. Haite, Chas. Napier Henry, Niel M. Lund, J. F. Lewis, H. H. La Thangue, George Wetherber, J. W. Waterhouse, Thomas Miles Richardson (senior and junior), Edward Richardson, Sir J. Noël Paton, J. W. Oakes, and A. Wakin Nicol are represented. There are always some pictures on loan from the National Gallery, and from time to time exhibitions of the work of local artists are held.

[The photographs are by Messrs. Jas. Bacon and Sons, Newcastle-on-Tyne.]

The provisional programme, so far as arrangements have already been made, for the Annual Meeting at Newcastle was published in the SUPPLEMENT of March 5th. The list of Officers of Sections was complete save for the Sections of Oto-Rhino-Laryngology and of Radiology and Electro-Therapeutics. The Officers of these two Sections have now been appointed as follows:

Oto-Rhino-Laryngology.
(Two-day Section.)

President: G. WILLIAM HILL, M.D. *Vice-Presidents:* JAMES DON, M.D.; R. GORDON BELL, M.D.; DAN MCKENZIE, F.R.C.S. Edin. *Honorary Secretaries:* LIONEL COLLEDGE, F.R.C.S. (22, Queen Anne Street, London, W.1); W. FRANK WILSON, M.B., B.S. (97, Jesmond Road, Newcastle-upon-Tyne).

Radiology and Electro-Therapeutics.
(Single-day Section.)

President: WILLIAM IRONSIDE BRUCE, M.D. *Vice-Presidents:* W. HOPE FOWLER, F.R.C.S. Edin.; ROBERT EDWARD HOWELL, M.B., C.M. *Honorary Secretaries:* JAMES METCALFE, M.D. (123, Harley Street, London, W.1); THOMAS LOWE BUNTING, M.D. (6, Portland Terrace, Newcastle-on-Tyne).

British Medical Journal.

SATURDAY, MARCH 12TH, 1921.

A PSYCHIATRIST'S REVIEW.

THE Physician-Superintendents of what is now known as the Royal Edinburgh Mental Hospital have accustomed us to expect that their annual reports shall partake rather of the nature of disquisitions on current psychiatric topics than detailed statistical statements. We propose here to make some comments on three topics, of interest alike to the profession and the public, dealt with by Dr. George Robertson in his report for 1920.

Some five-and-twenty years ago the late Sir Thomas Clouston, then physician-superintendent, induced the managers to build a hospital on a fine site in the outskirts of Edinburgh for the reception of private patients; the success of this hospital—Craig House—has surpassed the highest expectations of those who promoted it. Of the 126 patients admitted last year to Craig House no fewer than 66, or more than half, entered as voluntary patients. The procedure is simple: an application is made to the physician-superintendent in writing, who, if he thinks proper, admits the patient, and a similar application is sent to the Board of Control, which gives its sanction without further formality should the application be clear and unambiguous. The whole amounts to little more than notification. Dr. Robertson asks, "if the majority of patients of the richer classes are prepared to enter a mental hospital voluntarily for early treatment and without certification, and if their financial and other interests are sufficiently safeguarded by a formality which resembles notification," why should not similar facilities be available for the poor? At present the only course open, even in Scotland, to a person afflicted in mind, and not endowed with wealth, is to submit to certification as a lunatic and to be committed under an order granted by a sheriff. It is, Dr. Robertson says, useless in these circumstances to hope for the adoption of early treatment; he thinks that the Act of 1857 should be amended, and that the financial difficulty would be overcome were the Government grant in aid, given to assist in the maintenance of certified parochial patients, also given for voluntary parochial patients. Another but much more expensive plan by which early treatment can be obtained in Scotland is by temporary residence in a nursing home. This plan, it would appear, is approved by the Board of Control, for Dr. John Macpherson, one of the medical commissioners, in his address at the celebration of the centenary of the Dundee Royal Asylum, said: "We are inclined to think that adjunct houses, in which patients afflicted with certain forms of insanity could be received without the strict legal formalities at present recognized, would prove a benefical modification of our asylums." The managers of the Edinburgh Mental Hospital are in sympathy with this proposal; they have already established two such houses or homes, and hope to open a third this year.

The second topic of general interest discussed in Dr. Robertson's report is the policy of the temperance party in Scotland in seeking to secure total prohibition of the sale of alcoholic beverages when the vote under the Scottish Temperance Act was taken last year. As will be seen from the table reproduced on p. 401, the percentage of admissions to the Edinburgh Mental Hospital in which alcoholic excess is believed to have been the exciting cause has progressively declined in both sexes since the beginning of this century; alcoholism was less frequently assigned as a cause among women than among men, and the decline among them has been very remarkable. In the seven years before the war alcoholic excess was given as the exciting cause, on the average, in 9.6 per cent. of the cases in women; in the following seven years the average was 2.6; last year the percentage was only 1.0. It is pointed out that the number of cases of insanity alleged to be due to alcoholic excess is little more than a rough means of gauging the amount of excessive drinking in a community. "It only represents a fraction of the evil done to the nation by intemperate habits, just as the number of balls that find their way into the Swilcan Burn would represent a fraction of the bad play over St. Andrews Links." Still Dr. Robertson is not prepared to prescribe total prohibition for all, and in this he undoubtedly shares the opinion of his predecessor, Sir Thomas Clouston. "A simple and direct procedure like prohibition," he says, "may appear to be a very obvious remedy for the evil, but we have been well warned by Herbert Spencer that in a complex organization like civilized society such interference often brings with it consequences which are worse for the social body than the disease it is intended to remove." Owing to this attitude Dr. Robertson is regarded by the temperance party as a source of weakness, in spite of the views he has expressed on the subject of excess. His retort is—if that party had been content to advocate a reduction of licences they would probably have been rewarded with success.

Dr. Robertson, it will be remembered, is Professor of Psychiatry in the University of Edinburgh, and the third topic of general interest treated in this report is psycho-analysis. The theory of repression he regards as the main pillar of psycho-analysis, and that, he holds, leads inevitably to the conception of an unconscious, yet active, mind, for the repressed subject, "though forgotten, is not annihilated. It continues to exist unconsciously, and this not in a passive state, but as an active, though unsuspected, force." Freud's work, he considers, is continuous with that of two great teachers of the Edinburgh school; thus the unconscious mind is but an elaboration of the psychological aspect of Professor Laycock's famous hypothesis of "reflex, automatic, or unconscious cerebration," applied by him to account for the phenomena of delirium, dreams, and somnambulism. The idea of repression was grasped by Sir Thomas Clouston when he wrote in 1880: "The intense and complete outward repression and inhibition of certain physiological cravings required by our morals and our civilization causes, no doubt, a dangerous strain on the brain functions and a reaction in other directions, where there are hereditary neurotic weaknesses." And in another place he said: "The psychological analysis of what female modesty is, by a physiologist, reveals the transformation and apotheosis in the higher regions of the brain of reflex impressions from the reproductive organs into a high moral quality, not only beautiful, but absolutely essential to social life." Professor Robertson then goes on to point out how the theory of conscious and unconscious forms of mental action is in accord with the views enunciated many years ago by Hughlings Jackson, that

the higher nervous arrangements were evolved out of the lower, and kept down or repressed the lower, just as a Government evolved out of a nation controlled as well as directed that nation. In dreams, the conscious level, tired by the day's work, is put out of action during sleep, and the lower unconscious level runs riot in primitive and illogical dreams and nightmares. In insanity the higher or conscious level is usually put out of action to a greater or less degree by obscure poisons, by exhaustion, or by both, and the patient suffers from dreams by day, or at least from delusions and "such stuff as dreams are made of." Professor Robertson, therefore, is grateful to Freud for what he has done to bring the working of the sound and unsound mind into line with and closer to one another. People, Professor Robertson thinks, are furious with Freud because he endeavours to make them realize the kinships of their own highly cultured minds to those of beings of a primitive, coarser, or inferior type, whether these be children, savages or animals. This aspect of the matter is fully discussed in the remarkable book on *Instinct and the Unconscious* by Dr. Rivers, which was reviewed in our columns of February 26th, p. 305. The causes of such "fury" as has been displayed are other.

TRINITROTOLUENE POISONING.

THE modern high explosive trinitrotoluene or trinitrotoluol—commonly called T.N.T.—is a fine crystalline yellow powder sometimes used by the shell filler in the form of fused yellowish-brown lumps. It is obtained by nitrating toluene—a product of coal-tar distillation. Before the war it was generally believed to be much less toxic than trinitrobenzine, which had been manufactured in this country on a small scale for many years. Indeed, until towards the end of 1915 T.N.T. was looked on as an innocuous substance which had never been observed to set up illness. In November, 1915, toxic jaundice was added to the schedule of diseases that have to be notified to the Chief Inspector of Factories by a Home Office Order, but this was because of the toxic jaundice which had occurred in various aeroplane factories from the use of tetrachlorethane (a constituent of the dope or varnish applied to the canvas wings of aeroplanes), the cause of which was first discovered in this country in December, 1914. In the latter part of 1915 a few cases of toxic jaundice due to T.N.T. poisoning were reported, and in 1916 and 1917 a considerable number of cases of undoubted poisoning occurred. The question whether the poisonous effects were due to trinitrotoluene itself or to impurities or admixtures with it was fully considered; the conclusion reached was that T.N.T. alone was the causal factor.

An interesting Report[1] has now been issued by the Medical Research Council on T.N.T. poisoning and the fate of this substance in the animal body. Dr. W. J. O'Donovan gives an account of the clinical symptoms occurring amongst workers in munition factories where T.N.T. and preparations containing it were used. The clinical effects included anaemia, dermatitis, gastritis, and toxic jaundice. The severe types of anaemia were of the aplastic type and no parallelism existed between the occurrence of toxic jaundice and fatal anaemia. The occurrence of dermatitis was of interest since the conclusion to which the work of Professor Benjamin Moore pointed was that the skin was the main channel of absorption. No connexion was established between the occurrence of dermatitis and the two fatal manifestations of T.N.T. poisoning, toxic jaundice and aplastic anaemia. During the later stages of the war trinitrotoluene was largely mixed with ammonium nitrate for purposes of shell filling, as much as 80 per cent. of the latter being used, and this from its hygroscopic nature appeared to play an important part in the occurrence of dermatitis.

Toxic gastritis is described as of frequent occurrence; its relationship to toxic jaundice is not emphasized, though, from analogy with the tetrachlorethane cases, it seems likely that it would be an important premonitory symptom. Toxic jaundice appeared to occur more frequently in young adults, who when attacked were very prone to die, and in consequence employment in T.N.T. work of persons below the age of 18 was prohibited. The jaundice was associated in its early stages with enlargement of the liver and later with shrinkage, and it is interesting to note that ascites was observed in one case in which considerable shrinkage of the liver was found. A very important observation was the long latent period that might supervene between exposure to T.N.T. and the development of toxic jaundice. Dr. T. M. Legge recorded a case in which the latent period was seven months, and Professor Glynn one in which it was nine months. These observations are at the present time receiving confirmation from the long latent period that may intervene before toxic jaundice follows the administration of preparations of arsenobenzol, which are too often used with complete disregard for their effect on the liver cells. There seems to be no doubt that toxic liver poisons cause damage leading to ultimate necrosis of the liver parenchyma, and that a long latent period may supervene before a toxic jaundice, often of fatal type, occurs.

The animal experiments carried out by Dr. G. A. Wyon did not throw much light on the effects of T.N.T. observed in human beings. After doses relatively very much larger than those to which workers would be exposed, hepatic degeneration was produced in cats, rabbits, rats, and monkeys, but chronic poisoning with small doses did not cause it. In rabbits the administration of large doses of T.N.T. caused blood changes resembling an early stage of aplastic anaemia. The conclusion drawn from the animal experiments was that an unknown second factor probably co-operates with T.N.T. in the production of fatal forms of poisoning in man.

An interesting account of the metabolism and excretion of T.N.T. is given by Mr. T. A. Webster, to whom is due the discovery of the test for the detection of T.N.T. derivatives in the urine. It appears that the reduction condensation compound, azoxy-di-nitrotoluene, is formed, which is excreted in the urine in conjugation with glycuronic acid, and it is this substance which is detected by the Webster test or its modification by Tutin. Dr. Barbara Crawford, at the suggestion of Dr. O'Donovan, tested the effect of the application to the skin of an ointment containing 12½ per cent. of T.N.T. upon one of the patients suffering from toxic jaundice, with the result that no T.N.T. reaction was given by the urine, whereas in a control test on a healthy adult a definite reaction was given. It appears that in severe cases of trinitrotoluene poisoning there may be a failure to excrete the T.N.T. derivative in the urine, and it is therefore possible, as Dr. H. H. Dale suggests, that the absence of Webster's reaction in a person exposed to T.N.T. should be regarded as a danger signal.

Dr. P. N. Panton carried out careful investigations into the pathological changes induced by

[1] No. 58, Special Report Series, 1921. Price 3s. net.

T.N.T. in the human body, and Dr. H. M. Turnbull made very complete histological studies of the changes in the organs from cases in man and animals. The jaundice appeared to be a true toxic jaundice due to destruction of liver by the poison and not to be of haemolytic origin. The aplastic anaemia—the rarest and most fatal of the complications—was found to be due to a direct action of the poison on the blood-forming cells which thus caused a great reduction of the blood-forming marrow. It was not due primarily to haemolysis, though this occurred in the late stages of the anaemia. The blood picture was that of a progressive primary anaemia with high colour index.

The interesting question was considered as to whether progressive changes in the liver were set up in T.N.T. workers after their removal from the influence of the poison. In the severe cases of liver poisoning there was clear evidence of the occurrence of fatal toxic jaundice many months after removal from the influence of the poison, pointing to progressive degeneration of the liver. Where only minor liver damage occurred such evidence as was available suggested that this was recoverable and not progressive.

S. WEIR MITCHELL.

AFTER his death in 1914 the College of Physicians of Philadelphia, for which the late Dr. Silas Weir Mitchell did more than any other man of his generation, founded in his name and memory a triennial oration to deal with "the life and work of Weir Mitchell in their various aspects, or the relation of the physician to public life, or the physician in science or letters, or broad considerations of psychiatry and neurology, or surgery and military surgery in relation to morbid conditions and wounds and injuries of the brain and nervous system, or of scientific research, or medical books and libraries, or medical history and biography, and shall be, as far as possible, of general as well as professional interest." This long list well epitomizes the many-sided activities of his remarkable personality. The first oration, delayed by the war until 1919, was happily entrusted to Dr. C. W. Burr,[1] who reveals a literary gift of a high order, tinged with an attractive turn of gentle satire for the passing foibles of the younger generation. To Weir Mitchell and Sir William Osler the orator gracefully acknowledges his debt for influencing his intellectual life, and for teaching him the paramount necessity for intellectual honesty; it is accordingly with a pupil's reverence that he devotes the first oration to a description of Weir Mitchell as the physician, the man of science, the man of letters, and the man of affairs. The son of a scientific physician, he grew up in a medical atmosphere; otherwise it is probable that his natural inclination would have made him purely a man of letters. His early professional life was a struggle, for financial success was slow in arriving, but he filled in this probationary period by scientific research and did pioneer work on snake venom. The civil war provided him with opportunities for an extensive study of nerve injuries, and his great work, *Gunshot Wounds and other Injuries of Nerves* (1864), gave him a lasting reputation. Among his minor discoveries were the cremasteric reflex and erythromelalgia. His name became widely known in connexion with the rest cure; but, as Dr. Burr points out, it became too popular, and incompetent practitioners adopted it for patients who really were in need of a work cure. The first of his fifteen novels, *Hephzibah Guinness*, did not appear until he was 50, in deference to Oliver Wendell Holmes's advice not to jeopardize his professional prospects; and on this incident the orator remarks that "little-minded people are of the fixed opinion that no one can have mind enough to do more than one thing." The medical man and the neurologist show up but little in Weir Mitchell's novels, save for the accurate descriptions of really diseased characters, though some of his writings, such as those on dreams and double personality, form a connecting link between science and literature. Dr. Burr suggests that the reason why no medical man of letters has ever succeeded in depicting a doctor is that it is analogous to writing his autobiography or painting his own picture from a mirror; prejudice makes him see what he wants to see. He agrees with Weir Mitchell that George Eliot's Dr. Lydgate is the best description in modern English literature, and dismisses Dickens's doctors as either mere caricatures or silly, sentimental, goody-goody men; he does not mention Thackeray's Dr. Good-enough, generally regarded as a portrait of Elliotson, but perhaps this is too shadowy a sketch. As a poet Weir Mitchell was eminently successful for special occasions, and wrote charming verses on the country. Always interested in physico-therapy he advanced its applications and rescued it from the hands of charlatans; he also took an active part in instituting schools for training nurses and in numerous other public movements. He died in his 85th year when still at work, and almost had the boon that all men should pray for—namely, sudden death. Dr. Burr's tribute may recall Sir William Osler's obituary remarks,[2] in the course of which he applied to Weir Mitchell the remark made by Samuel Johnson about Mead: "No man ever lived more in the sunshine of life."

[1] The S. Weir Mitchell Oration, delivered before the College of Physicians of Philadelphia on November 19th, 1919, by Charles W. Burr, M.D.; pages 31. Published by the College. 1920.

INVESTIGATIONS INTO YELLOW FEVER IN MEXICO.

IN continuation of the researches into the etiology of yellow fever in Guayaquil which have been noted in our pages from time to time, making it highly probable that the causal organism is *Leptospira icteroides* and allied to the *Leptospira icterohaemorrhagiae* responsible for the form of infectious jaundice formerly termed Weil's disease, Noguchi, now in collaboration with I. J. Kligler,[3] has investigated the disease at Merida, the capital of Yucatan, Mexico. During the four years previous to 1919 a systematic anti-stegomyia campaign kept this city free from yellow fever, but in that year, as a result of an enormous crop of stegomyias, there was an epidemic of yellow fever from July to November, with 100 cases among newly arrived troops, and a death rate of about 50 per cent. Arriving in December, Noguchi and Kligler found opportunities, in one fatal case, a case that recovered, and in convalescent patients, for scientific investigation. Blood drawn from the vein of a patient on the second and third days of the disease, directly transmitted the disease to guinea-pigs, and there were indications of abortive or mild leptospira infection in guinea-pigs inoculated with blood drawn on the fifth day of the disease. Dark-field search for the leptospira in material from the fatal case was negative, but cultures of blood taken on the second day of the disease showed the leptospira. The morphological features and cultural properties of the strain of leptospira isolated from yellow fever in Merida were similar to those of the Guayaquil strains. By means of an anti-icteroid serum, prepared by repeatedly injecting a horse with different strains of *Leptospira icteroides* from Guayaquil, it was shown that the Merida strain belongs to the same group as the Guayaquil strain. Multivalent anti-icteroid immune serum prepared in the horse or univalent anti-icteroid immune serum prepared in the rabbit had a definite devitalizing action on the Merida strain, whereas antiserums similarly prepared with strains of *Leptospira icterohaemorrhagiae* did not have any perceptible effect upon the Merida strain. This observation is important not only in showing the relation of the Guayaquil and Merida strains, but also

[2] BRITISH MEDICAL JOURNAL, 1914, i, 120.

[3] H. Noguchi and I. J. Kligler, *Journ. Exper. Med.*, Baltimore, 1920, xxxii, 601-637.

in answering the criticism that "the yellow fever" in Guayaquil was really an infection with *Leptospira icterohaemorrhagiae*. Anti-icteroides serum protected guinea-pigs against infection, 0.1 c.cm. preventing fatal infection against at least 5,000 minimum lethal doses of the Merida strain, when given during the incubation period or at an early stage of the disease (fever and commencing jaundice), but being almost without effect at a later stage when the jaundice is deep and the temperature falling. If man's susceptibility to *L. icteroides* is comparable to that of the guinea-pig it may reasonably be assumed that intravenous injection of the serum at an early stage would have a similarly beneficial effect. A man weighing 80 kg. would require about two hundred times the amount of serum that a guinea-pig weighing 400 grams would, or 20 c.cm., and, if necessary, the injection should be repeated at intervals of four hours.

CATACLYSMAL HAEMORRHAGE AFTER TONSILLECTOMY.

BLEEDING of great severity is fortunately rare after tonsillectomy, and overwhelming haemorrhage leading to the almost instant death of the patient is amongst the rarities of medicine. A brisk arterial spurting from the tonsil-bed is not very uncommon, particularly in those adults who have a sclerotic, buried, tonsil. In such cases the vessel involved is commonly believed to be the ascending pharyngeal, or more rarely one of the other arteries which supply the tonsil, but abnormally placed or abnormally large. There are, however, in the archives of medicine, records of cases in which the haemorrhage was so appalling that one or other of the carotid vessels was believed to have been injured, no other regional vessel being thought capable of such violent bleeding. Fear of a disaster of this nature was well known to our fathers, and forms the background to a story told of Nélaton. A friend met Nélaton at some distance from Paris, and asked him what brought him thither. "I have just done the operation," he replied, "which takes most out of me. I have removed two tonsils." With this anecdote M. Sebileau[1] closes an exceedingly interesting description of an overwhelming and immediately fatal haemorrhage following tonsillectomy. M. Sebileau was not himself the operator. It was his duty to perform a necropsy on the child in question with a view to the absolution or arraigning of the surgeon. All who prize good writing, and particularly dramatic writing, may be recommended to read M. Sebileau's account of the operation and its sequels. The possibility of wounding either of the carotids has been doubted by many, and M. Sebileau went to considerable pains to establish beyond doubt the source of the haemorrhage in this case. He injected the two carotids and the internal jugular severally with three different coloured media and was able to show beyond all question that a piece had been cut out of the wall of the internal carotid artery. Precisely how this had happened, how the surgeon went blindly after the upper pole of the tonsil which had escaped removal, and how, hampered by the child's struggles, he cut away the posterior faucial pillar instead, is vividly described. The paper is well documented and contains a useful description of the relationships of the various vessels to the tonsillar fossa. M. Sebileau searched the literature of the subject and has found some eight or more recorded examples. It is not certain that in all of these the carotid was the vessel injured, but the violence of the haemorrhage makes this probable. M. Sebileau has collected also six cases of injury to the carotid inflicted whilst incising a tonsillar abscess. These accidents, when they do occur, are amongst the most painful disasters that can befall a surgeon.

[1] "Les artères carotides et les hémorrhagies cataclysmiques de l'amygdalectomie totale." P. Sebileau, *Bull. et Mém. de la Soc. de Chir.*. Paris, January, 1921, 109.

MOTOR FUEL ECONOMY TRIALS.

THE Royal Automobile Club has now issued the regulations to govern its fuel economy trials to take place on the afternoon of Saturday, May 7th, with the object of demonstrating the possibility of obtaining greater fuel economy in the use of cars than is now general. Many private motorists claim to have effected noteworthy economies in fuel consumption, and it is hoped that the trials will give wide publicity to such results and the means by which they are achieved. The Club realizes that the trial will also afford a good opportunity of testing the claims made for the very large number of appliances for reducing fuel consumption that are on the market and concerning which, as has often been pointed out in our motoring notes, the only way in which they can hope to deserve attention is to submit them to official tests. The public has been invited from time to time to spend large sums of money on devices which, it is claimed, effect fuel economy, but in connexion with which it is practically impossible to point to any official evidence in confirmation of the alleged gain. It is therefore noteworthy that one of the regulations wisely allows the judges, when making the awards in connexion with the forthcoming R.A.C. trial, to take into consideration the selling price of any fuel economy device submitted, on the principle that there is no economic advantage in spending £5 to save, possibly, £4 10s. The rules are of a simple character, designed with a view to encouraging the entry of private car owners, who have already shown a considerable interest in the trial and to whom it makes an obvious appeal. A measure of miles per gallon has been chosen as the basis of award for the reason that it is well understood by everyone. In effect, the result will be equivalent to saying that a car of a given make and horse-power, with a complement of passengers, is capable of running efficiently so many miles on one gallon of spirits. That is precisely what the public wants to know. The trial itself will consist of a series of runs from various centres throughout the country, and the date and time have been chosen so that the trial may appeal to a large number of motorists who will be free then. In each locality the course will be a short one. The three classes are for cars not exceeding 12 h.p.; exceeding 12 but not exceeding 20 h.p.; and for those exceeding 20 h.p. R.A.C. rating. These tests cannot be regarded as exhaustive or final. Rather would their usefulness seem to lie in their serving the purpose of eliminating trials of fuel economizers. We should learn which methods and devices are worthy of submission to really searching tests.

THE MEDICAL SOCIETY OF LONDON.

THE 148th anniversary dinner of the Medical Society of London was held at the Wharnecliffe Rooms on March 8th, with the President, Sir William Hale-White, in the chair. In proposing prosperity to the Society, the President traced the origins of medical societies, and remarked on the widespread desire that showed itself during the eighteenth century to form clubs and societies. Of the many medical societies founded in that century for the advancement of knowledge and the promotion of good fellowship, the Medical Society of London was one of the few that survived. Sir Anthony Bowlby, President of the Royal College of Surgeons, in proposing the toast of the Imperial Forces of the Crown, confined himself to the work of the medical services, upon whose efficiency the moral and spirit of the nation and of the forces depend so much in time of war. He told the story of how interference with the French Service de Santé by politicians early in 1917 caused temporary demoralization of the French army and nation after the failure of General Nivelle's offensive. Just before the attack the Minister of War did away with the central authority of the medical service, and the consequent breakdown of the arrangements for disposal, transport, and treatment of the wounded gave the

impression throughout France of appalling casualties; false tidings of disaster thus spread up and down the country. In responding to the toast Surgeon Vice-Admiral Sir Robert Hill, Medical Director-General, R.N., paid one more tribute to the services of his civilian colleagues in the Navy during the war, and echoed Sir Anthony Bowlby's hope that, when the time should come for the armed forces to prove themselves again, the medical lessons of the great war would be borne in mind, so that we might start where we left off and not where we began. Major-General M. H. G. Fell, Medical Administrator of the Royal Air Force, also briefly replied. The health of the visitors was proposed in very happy terms by Sir John Bland-Sutton, President of the Royal Society of Medicine, and in responding Lord Justice Atkin, President of the Medico-Legal Society, paid a sympathetic and discerning compliment to the medical profession. Dr. Russell Wells, Vice-Chancellor of the University of London, who also replied, spoke of the value of a university training in producing a good all-round man, as apart from a mere skilled technician, but expressed the view that the three earliest mediaeval universities—Salerno, Bologna, and Paris—all began as technical schools. In briefly proposing the health of the President, Sir D'Arcy Power described Sir William Hale-White as the embodiment of common-sense. A very successful evening ended with a toast to the energetic honorary secretaries, Dr. W. H. Willcox and Mr. H. W. Carson.

CONGRESS OF RADIOLOGY AND PHYSIOTHERAPY.

WE may remind our readers that the Congress of Radiology and Physiotherapy, organized by the Electro-Therapeutic Section of the Royal Society of Medicine and the British Association of Radiology and Physiotherapy, will be held in London on April 14th, 15th, and 16th, 1921, under the presidency of Sir Humphry Rolleston, K.C.B. The work of the Congress will be divided into three sections—radiology, electrology, and physiotherapy—and at each session papers will be read by representatives of France, Belgium, and England. All communications may be made either in French or English. The subscription for English members is 2 guineas, that for French and Belgian members 40 francs. The Secretary-General is Dr. G. Harrison Orton. Subscriptions should be sent to the honorary treasurer, Dr. J. Metcalfe, at the Royal Society of Medicine, 1, Wimpole Street, W.1.

INTERNATIONAL TUBERCULOSIS CONFERENCE.

As we have already announced, the next Conference of the International Union against Tuberculosis will be held on Tuesday, Wednesday, and Thursday, July 26th, 27th, and 28th, at South Kensington, under the auspices of the National Association for the Prevention of Tuberculosis. The Conference will be open to members of the International Union against Tuberculosis and to delegates from countries within the League of Nations and from the United States. It will be presided over by Sir Robert Philip, M.D., Professor of Tuberculosis in the University of Edinburgh, and the opening address will, it is hoped, be given by M. Léon Bourgeois, the retiring President. A discussion on the modes of diffusion of tuberculosis throughout the races of the world will be opened by Professor Calmette. The other subject proposed for discussion is the rôle of the medical profession in the prevention of tuberculosis.

THE "LANGHAM" TELEPHONE EXCHANGE.

WE announced at the end of November that preparations were in hand for the opening of a new telephone exchange in London to relieve the pressure on the existing Mayfair Exchange, and provide additional facilities in the area between Oxford Street and Regent's Park. The area to be served by the new "Langham Exchange" includes Harley Street and Wimpole Street, and therefore contains a large number of lines rented by members of the medical profession. On Saturday last the new exchange was opened and the circuits concerned were transferred from the Mayfair exchange. We have received from the Controller of the London Telephone Service a list of telephone subscribers affected who, so far as can be ascertained, are members of the medical profession. The list includes some 450 entries; it can be consulted at the Library of the British Medical Association. The new numbers of all those subscribers whose circuits have been transferred from the Mayfair exchange will appear in the next issue of the *London Telephone Directory*, which is due to be published on April 1st next. In the meanwhile, however, special arrangements have been made by the telephone service both to advise callers of the changes and to divert calls to the new exchange.

AT the meeting of the Royal Society on May 5th the Croonian Lecture will be delivered by Dr. Henry Head, F.R.S., on "Release of Function in the Nervous System."

Medical Notes in Parliament.

Dangerous Drugs Regulations.

SIR J. D. REES asked the Home Secretary, on March 3rd, why he would not receive a deputation from those primarily interested regarding the draft Regulations under the Dangerous Drugs Act, and whether he was aware of "the general consternation and alarm at the prospect of the regulation of the sale of drugs in the United Kingdom being dictated by gentlemen at Geneva, having no knowledge of the requirements of those needing and selling drugs in the United Kingdom." Mr. Shortt replied that he was perfectly willing to meet representatives of the different bodies interested and discuss the points they might raise on the draft Regulations. The Regulations had nothing to do with any gentlemen at Geneva; the Dangerous Drugs Act, under which they were framed, was passed in order to carry out our obligations under the treaty of Versailles and the International Opium Convention of 1912.

On a question by Major Barnett, on March 8th, whether the Home Secretary would consider the desirability of exempting duly qualified medical practitioners who dispensed their own prescriptions from Regulations which must necessarily prove irksome and oppressive, and involve an intolerable tax on their time, Mr. Shortt said he had received representations from the British Medical Association as to the records which would be required to be kept by medical practitioners who dispensed their own prescriptions, and he had communicated to them certain modifications which he should be prepared to make in the draft Regulations. The matter was still under consideration. Major Barnett further asked whether the draft Regulations provided that any package or bottle containing specified drugs should have plainly marked upon it the name of the drug and the amount it contained; whether the effect of this provision would be to give patients information which in many cases it was desirable they should not possess; and, if so, whether he would exempt from its operation the prescriptions of duly qualified practitioners. Mr. Shortt replied that he had received representations from the British Medical Association on this point, and had informed them that he was willing to agree to the exception suggested.

On a third question by Mr. Kiley as to the position of farmers, Mr. Shortt said that the whole question, including a suggestion as to the possibility of denaturing the drugs supplied for use by farmers, was under consideration, but he was not in a position to make any statement at present.

Proprietary Medicines Bill.

Captain Tudor Rees asked, on March 2nd, whether the attention of the Minister of Health had been called to the advertisement of alleged cures of cancer and other diseases, and whether he would introduce legislation to protect the public from the frauds and deceptions of advertisers. Dr. Addison replied that the Proprietary Medicines Bill, introduced last session, was intended to give effect to the recommendations of the Select Committee, which reported on this question in 1914. The bill was now being revised to meet certain objections of the commercial interests concerned, and he hoped it would be possible to reintroduce it during the present session, but he was unable at present to name any definite date.

Medical Record Cards.

Mr. Forrest asked, on March 2nd, whether the Minister of Health was still receiving any protests from panel doctors as to the work entailed by filling up the new forms of cards; and, seeing that the time so employed diminished the amount of attention that could be given to individual cases, whether he would inquire into the whole matter to see how the system was working. Dr. Addison replied that he could not accept the view that the keeping of records must detract from the time available for giving adequate medical treatment. In the majority of insurance practices the practitioner was responsible for less than one-fourth of the number of insured patients for which, in the view of the doctor's own representatives, an ordinary practitioner could safely assume responsibility. The number of objections from medical men and others concerned in working the system was insignificant. Out of some 150 Panel Committees, representing some 12,000 medical men on the panel, he had received protests from only nine, and those mostly on points of detail, although every effort had been made by certain persons to stir up discontent.

On further question on March 7th by Mr. Myers, Dr. Addison said that the number of complaints he had received about insurance medical records was quite insignificant, consisting of representations from five only out of 10,000 approved societies and branches, none from any of the Insurance Committees, and, as previously stated, nine, mainly on points of detail, out of 150 Panel Committees, representing medical men on the panel. The card was in substitution for two others used since the commencement of the Act, and had been designed mainly to give insured persons the advantages enjoyed by private patients in those practices where doctors kept records, and therefore were enabled to be guided in treating current symptoms by reference to the patient's previous medical history. Mr. Dennis Herbert asked whether it was not the case that one of these later cards was given up because it was practically impossible for doctors to complete it. Dr. Addison said that was quite true, and that was one reason why the revised card was designed. The new card certainly gave much less trouble than the old one. Mr. Herbert said he had studied the card with several doctors, who took a totally different view. Dr. Addison replied that the new card was designed by doctors, mainly by panel doctors, with a view to assisting them in their practice.

Industrial Fatigue Research Board.

Questioned by Captain Coote and Mr. Mills as to the reported decision of the Treasury to withdraw financial support from the Industrial Fatigue Board, Dr. Addison said that the expenditure on the Board was naturally being reviewed with all other public expenditure in the light of the imperative need for economy. The Board itself would be continued, and he thought he could safely promise that sufficient funds would be provided to secure its efficiency.

Security of Tenure for Public Medical Officers.

Sir Philip Magnus asked, on March 2nd, what progress had been made in giving effect to the promise contained in Dr. Addison's letter of May 31st, 1920, in pursuance of a previous promise of the Local Government Board to proceed with an order to give security of tenure to whole-time medical officers. Dr. Addison said he was advised that legislation would be required to afford this security of tenure to existing officers, and the Order which would shortly be issued must therefore be confined to new appointments.

Standardization of Serums, etc.—Sir J. D. Rees asked, on March 7th, whether the Minister of Health was devising a series of expensive measures relating to the control of serums and therapeutic substances, including a controlling authority, a big central laboratory and other machinery in consequence of a report of a recent departmental committee appointed to consider the subject. Dr. Addison said the question clearly referred to a report contained in a leading article in the *Times* of February 25th. There was no truth in the suggestion that he was devising any measures of the kind indicated. From 1909 onwards, suggestions had been made by the General Medical Council and other influential bodies for some method for securing a certain measure of standardization in serums and other potent drugs and substances which could not be tested by ordinary chemical means. In this desire the responsible drug manufacturers appeared to concur, and it should be remembered that some of these substances were made abroad as well as in this country. The Committee reported to him during January of this year, and the chairman (Sir Mackenzie Chalmers), on his own responsibility, suggested a draft bill. When the matter came before him (Dr. Addison) in January, he took the view that action on the lines indicated by the proposed bill was not practicable. So far as he had examined the subject the Committee appeared to contemplate that the Medical Research Council, which already had laboratory equipment, should supervise the carrying out of whatever test proved to be required. No action whatever had been taken upon the report, nor any recommendation made to his colleagues. The intentions attributed to him were entirely fanciful.

Mortality from Tuberculosis.—In reply to Lieut.-Colonel Raw, Dr. Addison said, on March 3rd, that although the conditions of active service no doubt increased the mortality from tuberculosis in weakly men, and in those already suffering from tuberculosis, he was advised that there was no evidence to show that there had been any increase in mortality from this disease among men who were healthy upon entering on naval or military service. The latest statistics indicated that there was in 1919 a very large decrease in the number of deaths from tuberculosis in England and Wales, including both pulmonary and non-pulmonary forms; the figures for 1919 being 46,312, as compared with 58,073 in 1918, and 55,934 in 1917. The figures for 1920, so far as they were at present available, indicated another decrease.

Venereal Disease Report.—Lieut.-Colonel Fremantle asked, on March 2nd, whether the attention of the Minister of Health had been called to the report of the Special Committee on Venereal Disease, recently published, and to its recognition of the value of immediate self-disinfection; and what steps were proposed to be taken by his department in the matter. Dr. Addison replied that the subject was now under consideration. All the relevant documents and evidence, including the report mentioned, would be considered.

Disability Pensions.—Colonel Gibbs, on behalf of Mr. Macpherson, stated on March 3rd that the number of cases in which a pension had been refused to an ex-service man on the ground that the disability on which he claimed was not due to service, was 25,700. In the case of widows the records of the Ministry did not show refusals before April 1st, 1920; the number of rejections since that date was 6,900. In all cases of refusals, whether of men or of widows, there was a right of appeal. Colonel Gibbs added that a man had a right of appeal to a medical board on the question of assessment, and to an independent tribunal on the question of attributability. On further questions Colonel Gibbs stated that the appeal tribunals had heard and decided 1,978 appeals lodged by widows against decisions by the Ministry that the disease from which the husband died was not contracted in, nor aggravated by, his service. Of those appeals 523 were allowed and 1,253 rejected. The decisions of the tribunals were final. These appeal bodies consisted each of one doctor, one lawyer, and an ex-service man. Major Glyn asked, on March 3rd, whether the Minister of Pensions was aware that in the event of a dependant entering a rate-aided institution—for instance, a lunatic asylum—the pension to which such an individual was entitled was suspended during the period of detention, and whether the Minister would consider the desirability of paying it to the local authorities for the relief of the rates, until such time as the man emerged from the institution. Colonel Gibbs said the matter was under consideration.

Housing and Tuberculosis Bills.—On inquiry by Mr. Ormsby Gore, on March 3rd, Dr. Addison announced that he proposed to introduce the Housing Bill and the Tuberculosis Bill before Whitsuntide.

Food Values.—Captain Elliot asked, on February 25th, if the Minister of Heath would consider whether information regarding nutritive and economical foods could be circulated to local authorities, education authorities, and the press, in view of the present distress and the great amount of manufactured and semi-manufactured food consumed by the people of this country. Dr. Addison replied he was considering whether it would be practicable to issue a pamphlet containing information on the lines suggested. It was difficult to make any general statements with regard to the values of food which were not liable to be misconstrued. He was having certain researches conducted on the subject in connexion with the Medical Research Council.

Maternity and Child Welfare Centres.—In answer to Sir Keith Fraser, on March 2nd, Dr. Addison said that according to the latest available information 43 persons (of whom 25 were men) were appointed during 1920, specifically as medical officers of maternity and child welfare centres, the annual rate of remuneration not exceeding £1 11s. 6d. per session, and amounting in the aggregate to about £3,660 per annum. In addition 36 persons (of whom 10 were men), were appointed by local authorities during this period, as whole- or part-time medical officers for maternity and child welfare work generally, at salaries varying from £150 to £750 per annum. These duties included in every case more or less direct supervision of the work of centres, but it was not possible to make any apportionment of the salaries for that purpose, or to estimate, even approximately, what proportion of annual cost of welfare work was attributable to this branch of the service. Milk and, in special circumstances, other food might be provided at less than cost for expectant and nursing mothers, and for children under five years of age, when such provision was certified by the medical officer of health for the centre or by the medical officer to be necessary and where the case was necessitous.

England and Wales.

THE LONDON COUNTY COUNCIL AND MEDICAL WOMEN.

THE London County Council requires as a general rule the women in its service to resign their appointments on marriage, but the operation of this standing order was waived for a time in the case of the women doctors, pending a report on the subject; the Council employs 31 medical women, of whom 5 are married. The General Purposes Committee reported to the Council on March 1st that the policy to be adopted in connexion with the employment of married medical women was very difficult to formulate. The Public Health Committee's view was that it was undesirable that medical women should leave the Council's service on marriage, and the medical officer of health also considered that married women doctors were able to bring specially valuable experience to their work. On the other hand, absence from duty owing to domestic reasons may involve the employment of temporary doctors, with, probably, some loss to the efficiency of the Council's service. During the past five years there have been two cases of absence of married women doctors owing to confinement. The Council, after receiving the report, decided to continue the employment of married medical women for a further period of three years from October next, when the period covered by the former resolution comes to an end. It was stated that difficulty was experienced at present in obtaining medical women of suitable qualifications in view of the general shortage of medical practitioners resulting from the war. Since the end of the war there has been a large increase in the number of medical students, women as well as men, but such students will not be ready for qualification until 1923 onwards.

PRESENTATIONS TO DR. ADAM FULTON.

On March 2nd Dr. Adam Fulton, late of Basford, Nottingham, was the recipient of a presentation from his fellow practitioners in Nottingham and Notts, as an appreciation of his untiring devotion to the interests of his professional brethren, on the occasion of his leaving the district to become a divisional medical officer under the Ministry of Health. On behalf of the local profession, Dr. C. J. Palmer, chairman of the Nottingham Division of the British Medical Association, and Dr. O. Isard, chairman of the Nottingham Panel Committee, congratulated Dr. Fulton on his appointment and wished him the best of luck. The presentation of a high power binocular Leitz microscope was then made by Dr. J. F. Blurton, president of the Nottingham Medico-Chirurgical Society. The speakers reminded the meeting that no man had done more to further the interests of the medical profession in the district than Dr. Fulton ever since he came to practise among them, especially in the direction of improving the conditions of contract practice. Dr. Fulton had been chairman of the local Medico-Chirurgical Society, and was largely instrumental in securing the purchase of its headquarters in St. James's Street. He had been chairman of the Nottingham Division and also of the Midland Branch of the British Medical Association, had represented the Division at the Representative Meetings, and for many years had been a very active member of the Council of the Association. He was also the first chairman of the Nottingham Panel Committee, and his sound judgement and knowledge of the Insurance Act proved of the greatest help to his fellow practitioners. During the war Dr. Fulton was a member of the Central Medical War Committee, and he cheerfully undertook the duties of the secretary of the Nottingham Division of the British Medical Association during the latter's absence on war service. He was a member of the City Council of Nottingham and vice-chairman of the Health Committee of the Council, and the Minister of Health appointed him a member of the Consultative Council of the Ministry. He had now left Nottingham, having accepted a post under the Ministry of Health, with his headquarters at Southport. Dr. Fulton, in returning thanks after the presentation, recalled some of the more strenuous fights of bygone days, and traced the gradual growth of the power and organization of the British Medical Association. Dr. Fulton was also presented on the same day with a handsome silver salver, suitably inscribed, by the Mayor of Nottingham on behalf of the City Council, in recognition of the valuable services he had rendered to the city as a councillor. The Mayor expressed the debt of gratitude the city owed to Dr. Fulton, not only on account of the benefit they had had from his medical knowledge, but also on account of his unusual business abilities. In the evening another presentation was made to Dr. and Mrs. Fulton as a token of the regard in which they are held by the residents of Basford. Alderman Pendleton referred to the happy relations which had existed for twenty-seven years between Dr. Fulton and the people of Basford, and on their behalf presented a massive oak bookcase and a Coalport china tea-service.

THE WARNEFORD HOSPITAL.

The annual Court of Governors of the Warneford General Hospital was held in the Town Hall, Leamington, on March 2nd, Dr. T. W. Thursfield taking the chair in the absence of Lord Algernon Percy. The annual report showed that 160 beds were available in the hospital, and the ordinary income had amounted in 1920 to £14,431, as against £12,826 in 1919; but the expenditure had exceeded income by £2,414, leaving a deficit balance of £2,294 to carry forward. A Ladies' Village Association had been started during the year in order to keep the villages of the area in touch with the requirements of the hospital. Dr. Thursfield said that it had been intended to carry out necessary improvements by building a new out-patient department and new nurses' quarters; but owing to the increased expense only the former could be done, and that through the liberality of the trustees, a timely legacy, and a gift from the Red Cross Society.

Scotland.

EDINBURGH STUDENTS IN PARIS.

OWING to the disproportion between the population of Edinburgh and the number of medical students in the city it is difficult to find a sufficient number of obstetric cases to comply with the regulations. A few months ago the Dean of the Medical Faculty suggested that an arrangement might possibly be made by which some of the students, men and women, should attend the requisite number of cases in Paris. Negotiations were opened up by Sir Halliday Croom, professor of midwifery in the university, and Dr. J. W. Ballantyne, lecturer on midwifery to women students in Edinburgh, with Professor Bar, the director of the Tarnier Hospital in Paris, who showed the utmost goodwill. All arrangements having been completed a party of thirty-five, consisting of fifteen men students and twenty women, left Edinburgh on March 4th, and on their arrival in Paris were met by some members of the Students' Association, who took the men of the party across Paris and entertained them at dinner. The ladies appear to have slipped away unnoticed.

THE ROYAL EDINBURGH MENTAL HOSPITAL.

The Royal Edinburgh Mental Hospital, known for so many years as Morningside Asylum, consists of two departments, the West House and Craig House, the latter erected five-and-twenty years ago for private patients paying the higher rates of board. The annual reports of the late Sir Thomas Clouston were never dull reading, and Dr. G. M. Robertson, his successor as physician-superintendent, has the same gift of interesting the public in the work of the institution. His report for 1920, the hundred and eighth annual report, shows that the number of patients in the West House was at the beginning of the year 731, and at the end 756, the corresponding numbers for Craig House being 262 and 274. The patients admitted during the year numbered 523 (West House 397, Craig House 126). This is the largest number admitted in any year since 1900, and more than half of the average number of patients resident, which was 1,001. Sir Thomas Clouston attributed the large number of admissions in 1900 to the excessive use of alcohol during a time of brisk trade and high wages. Dr. Robertson points out that the same explanation cannot apply to 1920, when the percentage of cases in which alcoholic excess was believed to

have been the cause was only 6.5 of the total admissions as compared with 23.5 in 1900. He gives the following table:

Percentage of Admissions Suffering from Insanity in which Alcoholic Excess was believed to have been the Exciting Cause during the Seven Years before and after the Outbreak of War.

	Male.	Female.		Male.	Female.
1907	13.6	9.2	1914	16.0	4.6
1908	15.0	7.5	1915	10.0	2.5
1909	16.4	9.8	1916	10.8	4.1
1910	13.9	11.2	1917	15.5	3.0
1911	28.9	9.7	1918	10.5	2.4
1912	14.0	8.6	1919	12.6	1.2
1913	12.5	11.5	1920	13.3	1.0

Seven-Year Averages.

	Male.	Female.
1900-6	30.4 ...	14.4
1907-13	16.3 ...	9.6
1914-20	12.6 ...	2.6

Dr. Robertson does not ask the public to be satisfied with this improvement, but expresses the hope that the Legislature may devise some measure which at the present stage will create less bitterness and resentment in a large section of the people than total prohibition. The fact that the number of admissions was so high implies, as is pointed out, that the majority were in the early and acute stage of their illness, and therefore needed special medical attention and careful nursing. The institution thus partakes to a great extent of the nature of a reception hospital, and this fact entails the employment of a larger staff and a large expenditure. Constant removals were necessary to provide accommodation for so many new patients suffering from an illness like insanity, which, even when a good recovery takes place, usually lasts months. During the year 139 patients were discharged recovered and 119 so far recovered that they could be handed over to the care of their friends; 76 were transferred to other institutions, and 152 died. These features of the medical statistics are due to the fact that the institution is still carrying on war work, and will continue to do so until the Bangour Village Asylum is reopened for the admission of patients from Edinburgh. It will be remembered that Dr. Robertson is himself professor of psychiatry in the University of Edinburgh, and he notes that Dr. Yellowlees, senior assistant physician, and his colleague, Dr. W. McAlister, have now been appointed university assistants; they conduct tutorial classes, the former in psycho-pathology and psycho-therapy, and the latter in mental defects and mental tests. The requirements for the diploma in psychiatry have been revised, and Dr. James Drever, Coombe lecturer in psychiatry in the university, has established an optional course of lectures in psychiatry for medical students. Further reference to the report will be found at page 394.

ABERDEEN UNIVERSITY WAR RECORD.

The University of Aberdeen is preparing a record of the services of its members during the great war, and memorials to those of them who fell in action or went down with their ships, or died of wounds or disease. The record contains about 3,000 names of graduates, alumni, students and members of the staffs, with particulars of the service of each and of the distinctions he gained. It is to be preceded by brief biographies, with portraits of the 337 who laid down their lives for their country and its cause. A large part of the volume has gone to the press, and the rest is rapidly nearing completion. The memorials which have been planned consist of a stained glass window in the ante-chapel of the University Chapel, at King's College, with oak panels on the walls bearing the names of the 337; of another window in the chancel, and of a memorial porch in Marischal College. The total cost of these memorials has been estimated at between £9,000 and £10,000. So far £4,700 has been subscribed, but further subscriptions are necessary, and may be sent to the Principal or to the Honorary Treasurer, D. M. M. Milligin, Esq., 12, Dee Street, Aberdeen.

DUNDEE ROYAL INFIRMARY.

Mr. Richard Charles Alexander, M.A., M.B., F.R.C.S.Ed., has been appointed visiting surgeon to the Dundee Royal Infirmary in succession to the late Mr. W. L. Robertson. Mr. Alexander is at present Assistant in the Surgical Department of the University of Edinburgh, Tutor in Clinical Surgery at the Edinburgh Royal Infirmary, and Assistant Surgeon to the Chalmers Hospital, Edinburgh. He served in the R.A.M.C. during the war, attaining the rank of major, and was mentioned in dispatches.

Correspondence.

SURGERY OF BREAST CANCER.

SIR,—Mr. Sampson Handley's lecture and the correspondence it has elicited are of great interest to surgeons. For the past ten years I have made it the rule, unless there was some special contraindication, to add the supraclavicular region to my operations for cancer of the breast in all cases in which the primary growth was situated in the upper half of the breast, and in all cases, wherever the primary growth was situated, provided that palpable secondary glands were present in the axilla. My reasons for this extension of the operation have been two:

1. That supraclavicular recurrence appeared in a certain proportion of cases in which there was no clinical evidence of extension elsewhere.

2. On general grounds it appeared to be sound, in cases where the axillary glands showed evidence of enlargement, to remove the next group of glands *not* enlarged: for cancer cells are certainly present in glands long before the latter are palpable. Mr. Parry's microscopical evidence of the condition of the supraclavicular region is proof of this, if proof were wanting of so obvious a fact. Indeed, the rule to remove the next group of glands *not* enlarged is desirable wherever practicable in dealing with cancer. The clearing out of the supraclavicular region adds little to the operation, and does not appreciably increase the risk.

There is no time for dealing radically with cancer so favourable as the first time, and to anticipate supraclavicular extension, even at a slightly increased risk, is far preferable to attacking it when present. The extension of the operation to the anterior mediastinum is not comparable in any way to the supraclavicular extension, as one is a simple business and the other is not.

It is to anticipate recurrence in the anterior mediastinum that I should be inclined in the future to follow Mr. Handley's advice to use buried radium in the upper intercostal spaces. In endeavouring to deal radically with cancer, every means at our disposal which science or practice suggests should be roped in. The time limit is a delusion, as every surgeon who follows up his cases must admit. It was first fixed at three years and subsequently extended to five. Some cases are undoubtedly cured but there is no time limit.

Apart from the cures, the great gain that is evident from our extended operations and auxiliary means of combating this disease is that the period of recurrence is considerably extended as compared with twenty years ago. It is commonly five, six, or seven years, where it used to be one, two, or three; and though five, six, or seven years may seem of small account in the first half of life, in the last three decades they are appraised at their true value.—I am, etc.,

CHARLES P. CHILDE, B.A., F.R.C.S.

Portsmouth, March 7th.

X-RAY RADIATION AND CANCER.

SIR,—In the literature devoted to *x*-irradiation of malignant diseases, the statement keeps constantly recurring that weak doses stimulate malignant growth, "thereby hastening the very end we are doing our best to avert."

During the past fifteen years I have treated very many cases of all sorts of malignant growths, and my experience does not bear this out. I have always found that the treatment, even when it did not cure, generally retarded the growth. The most interesting paper by Drs. Sydney Russ, Helen Chambers, Gladwys M. Scott, and J. C. Mottram, on "Experimental Studies with Small Doses of *X* Rays" (*Lancet*, April 26th, 1919) would also seem to support my view. This paper ought to be read by every

surgeon, for it is full of suggestion, and should point out to them the importance of pre-operative treatment, especially of mammary carcinoma, which is so largely neglected by English surgeons as compared with American surgeons.

I have seen it too often to have any doubt on the subject, that operation for mammary carcinoma, of even the most favourable type and done in the most thorough manner by the most capable surgeons, is followed in a large percentage of cases by rapid dissemination, which I am sure could have been averted by pre-operative treatment; whether by direct action on the carcinomatous cells, by its constrictive action on the lymphatics, or, as suggested in the paper above referred to, by its action on the blood, matters not.

Returning again to the subject of small doses stimulating malignant growth, I am anxious to find out whether or not this is one of the "myths" that are constantly copied from one writer by another and so perpetuated in medical literature, and I should therefore be exceedingly grateful to any one who can give me any evidence, experimental or otherwise, to prove the statement.—I am, etc.,

WILLIAM MITCHELL.

Bradford, March 1st.

THE SEARCH FOR A SPECIFIC TREATMENT OF TUBERCULOSIS.

SIR,—In view of the article under the above heading in the BRITISH MEDICAL JOURNAL, February 26th, 1921, which appears to be, so far as I know, the first indication of the general nature of Mr. Henry Spahlinger's treatment, may I be allowed to point out that investigations on parallel lines, as it seems to me, have not been altogether neglected in this country?

It is stated that Mr. Spahlinger's injections consist of "a combination of tuberculous antigens and of ferments" combined with "auxiliary treatment composed of ferments associated with lipoids."

During the past few years my attention has been concerned with lipase,[1] the lipolytic or fat-splitting ferment, and from experimental work carried out in the physiological and bacteriological laboratories, King's College, I[2] have concluded that in induced tissue lipolysis an explanation is afforded in part of natural and therapeutic immunization—that is to say, the main idea or principle underlying treatment in bacterial disease is, as I have suggested, the production of the lipolytic or fat-splitting ferment in the tissues, which in tuberculosis acts on the fats and lipoids of the tubercle bacillus, and is injurious to it. As I have shown, there are a number of substances which have the power of increasing or stimulating such lipolytic or fat-splitting action *in vitro* and *in vivo*. This property is shared by serum proteins, various tissue extracts, sodium oleate and inorganic salts, such as the phosphates and salts of calcium.

The same principle in part underlies treatment by vaccines and tuberculins, in which activators or co-enzymes of the fat-splitting ferment are present in varying degree. The tubercle bacillus itself is known to contain proteins, lipoids, fatty acids, phosphates and calcium, in addition to a large amount of fats and waxes. I have preferred to adopt the nomenclature of activators or co-enzymes rather than "antigens," because the former more correctly indicate the part played in the production of the lipolytic ferment. But to which of such activators or co-enzymes a therapeutic effect may be due is uncertain.

In drawing attention to this interpretation of the action of vaccines and tuberculins, I[3] suggested at the same time that "the products of ferment and bacterial digestion" might prove more serviceable than vaccines. In this connexion the serum of patients recovered from tuberculosis markedly accelerates or activates the fat-splitting action, compared with a decreased power in the acute stages. The former contains, as I concluded, the products of digested or partially digested tubercle bacilli, the result of the lipolytic or bactericidal action. Such products—namely, fatty acids or particular soaps derived or prepared from the action of the lipolytic ferment on the fats and lipoids of the tubercle bacilli—may not only be protective or act as stimulants to lipolytic activity, but the initial action of the ferment may liberate other contained activators. The presence of proteins or lipo-proteins in the tubercle bacillus does not exclude the products of proteolytic action secondarily, as such induced tissue ferments cannot, in view of the fatty capsule of the bacillus, be expected to act primarily. Similar products conceivably result from the growth of the living bacteria in the tissues or in nutrient media, or as a result of autolysis.—I am, etc.,

J. A. SHAW-MACKENZIE, M.D.Lond.

London, March 1st.

[1] *Proc. Roy. Soc. Med.* (Therap. and Pharm. Section), V, 1912, p. 152; Internat. Congress Med., London (Therap. Sect.), 1913; *Journal of Physiology*, xlix, 1915, p. 216.

[2] *Lancet*, 1919, ii, p. 825; *Med. Press and Circular*, 1920, ii, pp. 122 and 460.

[3] *Med. Press and Circular*, 1915, ii, p. 190.

THE RETARDED CINEMA AND CARDIAC ACTION.

SIR,—Referring to the interesting demonstration of the retarded cinema which Dr. Monod-Walter gave last week at the Royal Society of Medicine, your annotation (March 5th, p. 359) states that his second film, that of the isolated mammalian heart, showed "what most British students of to-day have seen in the laboratory." This is so as regards the film showing the normal rate of cardiac movement, but not, I think, as to what the retarded film showed. Someone had suggested that the films showed auricular fibrillation, possibly because the auricles exhibited little activity. The action of the heart was, however, regular, which is scarcely compatible with usual conceptions of auricular fibrillation. The auricles were, in fact, distended by the method used for maintaining the circulation.

The point, however, of most interest shown by the retarded cinema was a condition the existence of which is disputed by many, and which the film of the normal rate did not show—namely, a distinct hemisystolic action of the ventricles. Noting this at the first demonstration, I also attended the second, and was confirmed in my impression that contraction of the right ventricle preceded that of the left in the retarded film. A film, however, still more retarded would show the condition better. Should it be possible to photograph movements of the heart by the retarded cinema through the fluorescent screen the method might be of clinical interest, if not service. For, although in dissociated auriculo-ventricular action the greater rate of auricular over ventricular movement may be seen by the naked eye through the screen, a retarded picture would show this condition much more easily. This state, however, may be easily determined by other methods already in use. But the existence of ventricular hemisystole, in which from clinical observation I personally believe, would be more generally acknowledged were the retarded cinema found to show this state indubitably, as I think, with a little increased retardation, it would do. Nor would this be merely a matter of curiosity, for it would help to explain certain physical signs detected by auscultation.—I am, etc.,

ALEXANDER BLACKHALL-MORISON.

London, March 7th.

THE CURE OF HAEMORRHOIDS WITHOUT OPERATION.

SIR,—The article by Dr. Lyth and the letters which it has called forth appear to me to typify the attitude very often adopted by medical men in advising patients.

The number of conditions where the practitioner is justified in telling a patient that he *must* be operated on is relatively small; on the other hand, there is a multitude of disabilities where operation alone offers anything like a certainty of cure. I mean, of course, such diseases, to name but a few, as piles, chronic appendicitis, pyloric ulcer, gall stones, hernia, varix, prolapsus uteri, etc.

Surely the only course which an entirely unprejudiced doctor is justified in taking in such a case is to state the alternatives as clearly and fairly as possible to the patient and leave him to make the choice, instead of practically insisting upon his adopting whichever alternative appeals to the practitioner's predilections.

In a condition such as that described by Dr. Lyth I should be inclined to say to the patient: "You are suffering from engorged piles; the engorgement can be got rid of by medicine and local applications, after which you may, by carefully regulating your life, go along fairly comfortably, perhaps for many years; on the other hand, if you wish to be able to lead an entirely normal life and to be free from rectal discomfort, the only certain remedy I know is the removal of the diseased veins by surgical means."

Many patients will decide to lead a modified life rather than submit to operation, but many others (and we may surely rejoice that it is so) will act according to the Stevensonian axiom that "the love of living is stronger in an Alpine climber roping over a peril, or a hunter riding merrily at a stiff fence, than in a creature who lives upon a diet and walks a measured distance in the interests of his constitution," and will wish for curative rather than palliative treatment.

I am convinced that an enormous amount of defective health is the result of failure on the part of medical men and women to point out clearly the pros and cons of surgical treatment; that this is so is illustrated by the frequency with which patients whose lives have been made fuller and more comfortable by operation tell me that they would have had the operation done earlier had not their doctor definitely dissuaded them.—I am, etc.,

Bradford, March 6th. JAMES PHILLIPS.

SIR,—I had anticipated that critics of the method which I advocated would not be wanting. I had, however, expected them to be found in the ranks of surgery rather than of medicine.

Dr. Copeman's letter amounts to a direct negative, unsupported by either theory or practice, which does not form a basis for discussion. He is welcome to his little joke; but if he reads my article again, he will see that I quite recognize that certain haemorrhoids cannot be replaced within the sphincter ani, and indeed, that it is preferable that no undue attempts should be made to treat them in this way. His sorrow and his hilarity will therefore be wasted in my case.

Dr. Morley's criticisms, on the other hand, strike at the basis of the treatment which I adopt, and if they were justified no lasting results could be obtained in this way. I do obtain such results, so I am constrained to examine his criticisms for the flaws which they must contain.

There are two main questions at issue: (1) Whether internal haemorrhoids can become external haemorrhoids; and (2) whether internal haemorrhoids cause severe symptoms without prolapsing.

In regard to the first question, which Dr. Morley answers with an emphatic negative, I am afraid he is assuming that the condition in which he finds the parts is that in which they have been more or less throughout the course of the disease, and in which they remain throughout the changing conditions of everyday life. I am aware that his view, while not definitely stated, is that tacitly assumed by most authors. Yet this is by no means entirely so; and although I am in the habit of preferring my own observation, when practicable, to that of others, I find that Walsham and Spencer (*Theory and Practice of Surgery*) describe three kinds of piles—the internal, covered with mucous membrane; the external, covered with skin; and others, "in many instances covered in part with skin and in part with mucous membrane," which they refer to as "mixed piles." This condition, I take it, is produced when "internal piles" have been outside long enough for the process of conversion to "external piles" to be taking place. Keen describes a fourth variety as "false piles," the tags of skin into which, in my view, the piles when cured become converted. We have thus the complete sequence I described. Moreover, all authorities agree in describing the etiology of internal and external piles as identical, and all agree that internal piles may become permanently prolapsed and yet may be spontaneously cured in that position. One cannot help wondering what an "internal pile" outside the anus, still covered with mucous membrane and yet cured, looks and feels like.

From the point of view of clinical experience my own observation leaves me not the slightest doubt that, as I stated in my article, the distinction between internal and external haemorrhoids is purely artificial. It may be that Dr. Morley has not been under the necessity of watching the course of an individual pile for several years, day in and day out. I have had that experience, and I assert that without a doubt it began by prolapsing occasionally, and ended as a tag of skin. From correspondence which I have had with other practitioners I know that I am not alone in this view; but even if I were, "seeing is believing." That there is nothing histologically unique in mucous membrane giving place to skin when exposed to conditions outside the body will surely be admitted—for example, the glans penis after circumcision.

This assumption that the relation of the parts during examination is necessarily or even probably that existing during the whole twenty-four hours is evidenced even more markedly in Dr. Morley's second contention: that internal piles cause severe symptoms without prolapsing. If he had read my article a little more carefully he would have noticed that I stated that "so long as it is inside and remains inside—even during defaecation—it does little harm." He assumes, because he finds piles inside the anus causing haemorrhage, etc., that these symptoms occur while the piles are inside. In the same way, until comparatively recently the stomach was regarded as a "stomach-shaped" organ because its *post-mortem* appearance gives this definite shape. It is only since *x*-ray examinations with bismuth meals have shown that it is rather to be regarded as a muscular tube that a true conception of its condition in the living body, under the changing demands of digestion, has been arrived at. Likewise, Dr. Morley regards the anus as a canal having a certain lining; he does not appreciate the fact that this lining is normally protruded to a marked degree during defaecation. Yet a very little observation, of animals no less than of human beings, should have made him realise this. The erectile tissue remaining as a vestige of reptilian life lends itself to this, no less than the musculature and heavy pressure from above. Keen states, in regard to internal haemorrhoids, that "the physician will secure a demonstration of them by having the patient strain in the squatting posture after enema." Furthermore, how can a pile bleed externally (excepting the negligible quantity which is passed along with the motion) unless it is prolapsed? In point of fact the most severe haemorrhages take place after the motion, while the patient is still at stool, with the haemorrhoids prolapsed, the blood often squirting in all directions as from a cut artery. Yet after time has been allowed for their replacement—perhaps soon and automatically—such a patient may be examined without any prolapse being found or stated to have occurred. Such piles Dr. Morley would regard as having never prolapsed. Yet if the bleeding were to take place inside the anus and above the sphincter the experience would be that a quantity of blood would accumulate to be passed in front of the next motion; it would be dark and clotted. In point of fact the blood comes after the motion, and is bright red and fluid. It is while such haemorrhoids are thus temporarily prolapsed, immediately after a motion, that it is possible to apply the treatment which I have advocated; and in my view, unless there is at least temporary prolapse, there are no serious symptoms.

So much for the pathology. In regard to treatment, Dr. Morley is guilty of distortion in assuming that I suggest that a patient who has undergone this treatment must afterwards wear a pad and powder the piles frequently. I said nothing of the kind. I advised that he should have a pad and calamine powder available. In point of fact, beyond the nocturnal defaecation, which I would in any case advise even after operation, I have not found that any further treatment, such as the application of the powder, is necessary, unless undue constipation or an attack of diarrhoea has been experienced. To point a comparison of this state of affairs with that after operation, I am at this time instituting treatment in the case of a lady who had her haemorrhoids removed by operation some five years ago.

I cannot discuss from experience Dr. Morley's treatment by injection; but I notice that even this treatment is not instantaneous nor very simple, as he says that the injections must be repeated at weekly intervals (for an indefinite period), which does not entitle him to the scorn with which he regards the six weeks I have specified as an average space of time. Moreover, I find that Warbasse (*Surgical Treatment*) regards injection with phenol as dangerous. He says, "Pyemia and hepatic abscess have followed this treatment," and that it is "justified only when the patient understands the risk, when an anaesthetic cannot be administered, and when a surgeon capable of performing a safer operation cannot be had." In the face of such a warning I prefer to go on curing my patients in my own way, which is safe, if not heroic.—I am, etc.,

York, March 5th. J. C. LYTH, M.B., B.S.

PUERPERAL INFECTION.

SIR,—There have been many articles of late on this subject, but it seems to me that many of the writers do not fully realize the conditions under which the average practitioner has to work. The question of perfect asepsis is, after all very largely one of expense. It is suggested that we should arrive at our cases armed with drums of sterile gowns, dressings, towels, gloves, and other impedimenta, as for a surgical operation in a fully equipped hospital. To use these properly we should require at least two capable trained nurses, and for most cases a qualified assistant. We should also have to have a room to work in suitable to accommodate all the impedimenta we brought with us.

The other side of the picture is provided by our actual experiences. Our equipment has to be of such dimensions as can be carried on a bicycle or motor cycle or in our hands; our only assistant is usually an untrained monthly nurse or a relative of the patient; there is frequently a lamentable deficiency of the ordinary articles of utility. The patient has almost invariably a fully loaded rectum, which empties itself during the passage of the head over the perineum, infecting everything within a radius of a yard or so. The doctor has to apply the forceps or do other operations and give the anaesthetic at the same time, because the extent of the money available is in the neighbourhood of £2 (to include attendance for ten days). To carry out the precautions necessary to ensure absolute asepsis—which most of us fortunately desire—would involve an expenditure of at least £10 to £15, and probably more.

Under present conditions the most careful practitioner cannot help getting a certain, though fortunately small, proportion of cases which get some degree of infection. Perhaps in the remote future confinements will be made compulsory in properly equipped State lying-in hospitals where expense will be no object, but until then we shall not reach our Mecca of perfection.—I am, etc.,

H. W. OGLE-SKAN, M.R.C.S., L.R.C.P.

Hendon, N.W., March 6th.

RISKS AFTER OPERATIONS ON TONSILS AND ADENOIDS IN OUTDOOR CLINICS.

SIR,—The recent correspondence on this subject has described nothing that was not known to us all, with the possible exception of one or two favoured individuals. We should all like these operations done under better conditions. Neither the general public, nor the subscribers, nor hospital boards of management are ignorant of the facts. The correspondence leads nowhere. Dr. Andrew Little says that his worst cases have been private cases carefully attended to in good nursing homes. Exactly so. It would be quite easy, on the other hand, to demonstrate surprisingly good results from the present system.

The only point that appears to have been really established is that an occasional case will give trouble or go wrong whatever the conditions may be. Within my experience there has been vast improvement, speaking generally, in the circumstances under which these operations are done. This improvement can continue, and no doubt will continue. Most people know that counsels of perfection are out of the question at present in most places.—I am, etc.,

London, W., March 2nd. T. JEFFERSON FAULDER.

FATAL POISONING FROM ACID FUMES.

SIR,—I was greatly interested in Dr. T. Gillman Moorhead's communication in your issue of January 15th, under the heading of "Fatal poisoning from the inhalation of acid fumes in a laboratory." It is apparent from the very wording of this heading that Dr. Moorhead was unable to arrive at an exact diagnosis.

To my mind the course of events becomes very clear by a process of analysis and exclusion. In the first place, of the three compounds with which the unfortunate student was working, one only could give rise to fumes of such toxicity by the action of sulphuric acid—namely, the stibnite. If this were an impure sample, if there were any metal present, such as iron or zinc, forming hydrogen with this acid, or if such a metal had been wilfully introduced in the course of the experiment, it is highly probable that stibine, or antimoniated hydrogen, was evolved. This gas is intensely poisonous, and practically odourless.

On looking through Dr. Moorhead's notes of the case we find two separate sets of symptoms: the earlier consistent with direct irritation of the respiratory tract by the inhalation of the acid fumes—trivial in itself and of almost daily occurrence in a big chemical laboratory—and the later due to absorption of some poison into the system. And these later symptoms—namely, furred tongue, rapid feeble pulse, weakness and loss of weight, diarrhoea, albuminuria, icterus and hepatic enlargement (due, doubtless, to fatty degeneration)—are a perfect picture of antimony poisoning.

Was a *post-mortem* examination made? The presence of a sufficient quantity of antimony in the body to carry out Marsh's test would almost certainly have clinched the diagnosis. As regards prognosis, the case was probably hopeless from the outset owing to the difficulty of eliminating antimony absorbed in such a way.

As regards its importance to laboratory workers, I think the lesson to be learnt is that the fume chambers in this particular laboratory are not effectively ventilated for work with lethal gases.—I am, etc.,

WILLIAM CORBET, M.B.

Point Fortin, Trinidad, Feb. 10th.

PREVENTION OF VENEREAL DISEASE.

SIR,—I think some of the objections to the issue of prophylactics to the civil population are, briefly, as follows:

The issue of such preventives tends to undermine that reasonable and natural self-control which is the truest safeguard against disease. Self-disinfection increases the number of men who expose themselves to infection, is admittedly unreliable, and will eventually increase disease. It is useless and inconsistent to instruct the young on matters of sex, including the advantages of continence, and at the same time to countenance the issue of prophylactics. Early marriages reduce the prevalence of venereal disease. The encouragement of illicit intercourse means fewer marriages and less family life.

The issue of prophylactics is unscientific. It does not attack the real causes of the trouble. Such a policy tends to direct attention away from those social, economic, and hygienic reforms which have a real and lasting influence in reducing venereal disease.—I am, etc.,

Libodi, South Africa, Feb. 6th. L. C. ROWAN-ROBINSON, M.B.

Obituary.

SIR FELIX SEMON, K.C.V.O., M.D., F.R.C.P.LOND.,

Honorary Consulting Laryngologist, National Hospital for Paralysis; late Physician Extraordinary to H.M. King Edward VII.

IT is with deep regret that we record the death of Sir Felix Semon on March 1st at his residence, Rignalls, Great Missenden, at the age of 72 years.

Felix Semon was born at Danzig on December 8th, 1849, the son of a stockbroker, and began his medical studies in 1869 at Heidelberg. He served in the Franco-Prussian war of 1870 as a volunteer with the 2nd Uhlans of the Prussian Guard. After the war he returned to Berlin, and graduated M.D. in 1873. He then went to Vienna and Paris for post-graduate work, devoting his attention especially to diseases of the throat, a department of medicine then in its infancy, but destined to far-reaching developments, to which Semon in his lifetime contributed so largely.

Semon was appointed a clinical assistant at the Throat Hospital, Golden Square, London, in 1875, where his exceptional talents and capacity for scientific research were quickly recognized and led him to decide to settle in London. In 1876 Semon was admitted a Member of the Royal College of Physicians of London, and in 1885 became a Fellow of that College. He was elected in 1877 to the honorary staff of the Golden Square Hospital, and in 1882 physician in charge of the Throat Department of St. Thomas's Hospital, where he founded the special clinic to which his rapidly increasing reputation as a sound and reliable teacher and practitioner, attracted a great many students and practitioners. In 1888 he was appointed laryngologist to the National Hospital for the Paralysed and Epileptic, where he had opportunities for the special investigation of the neurological problems in laryngeal paralysis and other throat affections, to the elucidation of

which he had already devoted himself with signal success, and, with his friend the late Sir Victor Horsley, entered on clinical and experimental researches which made for British laryngology a world-wide reputation.

The Laryngological Society of London was founded by Semon in 1893, and he was its President for three successive years, 1894–1896. When later the Royal Society of Medicine was incorporated, Semon took a leading part in bringing together the British Laryngological, Rhinological, and Otological Societies, and the Laryngological Society of London. By their coalescence the Laryngological Section of the Royal Society of Medicine was constituted. He continued to devote his best energies to the meetings of the Section, and by his genial presence, enthusiasm, and scientific work he contributed greatly to its success. He was president of the Section of Laryngology at the annual meetings of the British Medical Association in Glasgow in 1888 and in London in 1895.

Semon's original contributions to his speciality were of great value, but far too numerous even to mention here in detail. Perhaps the more notable were those on laryngeal neurology and on malignant growths of the larynx, the series of articles on diseases of the pharynx, larynx, and trachea contributed to Allbutt's *System of Medicine* in collaboration with Watson-Williams, on malignant growths of the larynx in the *Encyclopaedia Medica*, and articles in Heath's *Dictionary of Surgery*, and in Heymann's *Handbuch der Laryngologie*. He was the founder and for twenty-five years the editor of the *Internationales Centralblatt für Laryngologie und Rhinologie*, while his own *Forschungen und Erfahrungen*, 1880–1910, is a work of great value and lasting interest.

In the early eighties his clinical investigations had led him to the conclusion that in all progressive organic lesions of the centres of trunks of the motor laryngeal nerves, the abductors of the vocal cords succumb much earlier than the adductors. He strengthened his deductions, based on clinical work by experimental research in conjunction with Sir Victor Horsley. After a long controversy with various noted laryngologists, who sought to explain the facts by other theories, Semon successfully upheld the accuracy of his observations, and succeeded in establishing his thesis as a clinical fact of considerable interest and import, which is known and recognized as "Semon's law." Semon's contributions to the early diagnosis and operative technique of malignant growths of the larynx, more especially the indications for thyrotomy in intrinsic laryngeal cancer, were notable. The successful results obtained from removal by laryngo-fissure in suitable cases by Butlin induced Semon to adopt that route at a time when the intralaryngeal method was practised and commended by some leading European authorities. But it was essentially Semon's elaborated and accurate methods of differential diagnosis, of such practical import for the early recognition of malignancy while still amenable to successful eradication by laryngo-fissure, that placed this operative measure in the unassailable position it has continued to occupy. In Semon's own hands a lasting cure was obtained in over 80 per cent. of the cases he operated on for malignant laryngeal growths, and through the adoption of his successful diagnostic and operative practice, by most laryngologists throughout the world, his work has proved of immense and lasting benefit to humanity. Furthermore, these methods of early diagnosis, by avoiding the necessity for more drastic and maiming operations, have been the means not only of saving many lives, but a large number of patients who have undergone a radical operation for laryngeal cancer are restored, without losing their voice, to a useful and happy life.

Semon's scientific mind could not tolerate inaccuracy, and he was relentless in pursuing what he deemed error in observation or statement in others. In his early days prejudice against specialism and specialists was in many quarters strong, and sometimes found intemperate expression. Semon was always ready to speak for the defence; he did not mince his words, and became engaged in several rather heated controversies. He was a regular attendant and frequent speaker at the meetings of the medical societies. His reputation as a consultant for diseases of the throat brought him a large laryngological practice, which he continued to enjoy till he retired in 1911 at the zenith of his career. Expression was given to the esteem in which he was held at the banquet organized to mark the occasion of his retirement, when the late Sir Henry Butlin presided over a gathering comprising the great majority of British laryngologists, as well as many distinguished foreigners and a large number of musicians, artists, literary and other friends. A sum of £1,040, subscribed as a testimonial expressive of their warm regard for him and appreciation of his life's work, he presented to the University of London to establish a trust for the purpose of awarding a commemorative bronze medal for the best work in the treatment of diseases of the throat and nose and to found a lectureship to be called the "Semon Lectureship in Laryngology." Anxious as he ever was to promote the authoritative position of the Laryngological Section of the Royal Society of Medicine, it was by Semon's special request that two members of the board by which the lecturer is appointed are elected by this Section.

Semon was honoured by the confidence of H.M. Queen Victoria, who conferred the honour of knighthood upon him in 1897; later he was appointed Physician Extraordinary to H.M. King Edward VII and received the K.C.V.O. in 1905. In 1888 he had received the Order of the Red Eagle, and in 1894 the German Emperor conferred on him the title of Royal Prussian Professor. During his lifetime he was honoured by almost every laryngological society in Europe and America. He was an Honorary President of the Madrid Laryngological Society and Honorary Fellow of the Italian, Petrograd, and American Laryngological Associations. To no other laryngologist has fallen such a world-wide recognition as came to Felix Semon. With it all, there was never a kindlier and more considerate friend to younger practitioners, ever anxious to bring out and encourage the latent talent that he was often the first to discover and to promote.

We have but touched on the main features of Semon's life as a physician known for his work in laryngology, yet we cannot leave our tribute to his memory without reference to some of his other attributes. He was not only an accomplished pianist, but as a composer displayed talent of no mean order; as a raconteur he was delightful, as a friend he was ever true and steadfast, a thorough sportsman, a fearless rider and a keen deer stalker, as the many heads adorning his mansion at Great Missenden testify.

Semon's geniality and courtesy, his vivacious conversation and generous hospitality, rendered him a conspicuous figure in society, but by his many friends he was loved for his warm heart and unswerving fidelity. Latterly increasing ill health compelled him to live a very quiet life, and almost entirely at Rignalls, which he had designed and built, devoting much of his time to literary pursuits and to his garden. A little more than a year ago he underwent a severe operation, and, though he recovered from this, he never regained his old energy, but his last illness, which so rapidly proved fatal, was quite unexpected.

To the last he never failed to maintain a keen interest in affairs, and particularly in the speciality he adorned, and all that concerned the progress and advancement of laryngology in this country. A recent example of this is furnished in connexion with the famous Onodi collection. "This country ought to possess the collection," said Semon to the writer on hearing from the late Professor Onodi's son that it was for disposal; and it was Semon's initiative that led to the collection being brought to London to that end, although after its arrival here, as is common knowledge, the credit of securing it for this country belongs entirely to two of his colleagues and to those who supported their successful effort.

He married in 1879 Louise Dorette Augusta, daughter of H. Redeker. To Lady Semon and their three sons we tender our deepest sympathy. His eldest son, Dr. Henry Semon, is practising as a dermatologist. In the late war Felix Semon himself repeatedly offered his services, but at his advanced age he had to be content with sending his three sons.

SIR CHARLES ALEXANDER CAMERON, C.B., M.D.,
Medical Officer of Health, Dublin.

WE announced briefly in our last issue the death of Sir Charles Cameron, C.B., which occurred in Dublin on February 28th, in his 91st year. Born in Dublin on July 16th, 1830, the son of Captain Ewen Cameron, of Lochaber, Charles Alexander Cameron received his early education in Dublin, afterwards going to Germany, where he graduated Ph.D. in 1856. He obtained the L.R.C.P.I. in 1868, becoming a Fellow of the College in 1898, and he

became F.R.C.S.I. in 1874. He held the D.P.H. of Cambridge and of the Irish College of Surgeons, and was made an honorary M.D. of the Royal University of Ireland in 1896. In 1867 he was elected professor of hygiene in the Royal College of Surgeons of Ireland, and for more than half a century he had charge of the public health of the city of Dublin, where his greatest public services were rendered. Upon many occasions his opinion was invited by public bodies abroad as well as in Ireland, and he always readily placed his great experience at their disposal. As a sanitary scientist his name was known throughout Europe, and he was elected to the honorary membership of a number of foreign learned societies, including the Swedish Academy of Medicine and the Hygienic Associations of Paris and Bordeaux. He was a past president of the Royal Institute of Public Health, of the Leinster Branch of the British Medical Association, and of the Irish Medical Schools' and Graduates' Association. In 1884 he was elected president of the Royal College of Surgeons of Ireland, and in the same year the honour of knighthood was conferred upon him by Queen Victoria "in recognition of his scientific researches and his efforts to improve the state of public health in Ireland." The distinction of a Companionship of the Bath was bestowed upon him in 1899, and in 1902 he was awarded the Harben gold medal by the Royal Institute of Public Health. The list of works from his pen is long, and includes volumes on the chemistry of agriculture, the chemistry of food and a manual of hygiene, but perhaps his chief works were *The History of the Royal College of Surgeons in Ireland* and *A History of Medicine in Ireland.* Sir Charles Cameron was a man of extraordinary energy and activity, but as he always worked in a most methodical manner he never seemed hurried. He found recreation in a change of occupation, and the holidays he allowed himself were spent chiefly in attending medical and other congresses. He held high office in Irish Freemasonry, and he was the founder of the Corinthian Club, a well-known social club in Dublin. He married in 1862, Lucie, daughter of the late Mr. John Macnamara, a noted Dublin solicitor; she died in 1883, and he is survived by a son and two daughters.

PHINEAS SIMON ABRAHAM, M.D.,

Consulting Dermatologist to the West London Hospital, Hammersmith.

WE have to record with regret the death, on February 23rd, of Dr. Phineas Simon Abraham in his 75th year. He had never quite recovered from the serious illness from which he suffered last year, and had been failing for some weeks before his death. He was born in Jamaica; intending to become a mining engineer, he entered University College, London, and took the B.Sc. degree of the University of London. He attended also the Royal College of Science, Dublin, where he was a royal exhibitioner. Entering Trinity College, Dublin, he was first senior moderator in 1871, and gold medalist in natural science and scholar. He received the M.A. with distinction from the University of Dublin, and entered St. Bartholomew's Hospital with a science exhibition and scholarship in 1876. He took the diploma of F.R.C.S.I. in 1880, having in the previous year been appointed curator of the museums of the Royal College of Surgeons, Dublin. In 1885 he returned to London on appointment to be lecturer on physiology and histology at the Westminster Hospital Medical School. Shortly afterwards he was appointed dermatologist to the West London Hospital, and became a lecturer on that subject in the Post-Graduate College there. He was also at one time surgeon to the Hospital for Diseases of the Skin, Blackfriars. He was one of the principal founders of the Royal Academy of Medicine of Ireland and of the Dermatological Society of Great Britain and Ireland. He was president of the West London Medico-Chirurgical Society in 1910–11; he had also been president of the Irish Medical Schools' and Graduates' Association. During his term of office he founded and endowed the triennial gold medal awarded by the West London Medico-Chirurgical Society for distinguished services or for exceptional heroism in the discharge of medical duties. When the annual meeting of the British Medical Association was held in London in 1910 he was president of the Section of Dermatology. He was the author of many articles on dermatological subjects, among others those on leprosy and several other diseases of the skin in Sir Clifford Allbutt's *System of Medicine.* He took a particular interest in leprosy, was medical secretary of the National Leprosy Fund in 1889, and represented this country at the International Lepra Conference in Berlin in 1897. He edited also the *Journal* of the Leprosy Investigation Committee. Dr. Abraham, whose genial disposition won him many friends, is survived by his widow and a daughter.

The Services.

R.A.M.C. ROLL OF HONOUR.

THE official Roll of the Officers of the Royal Army Medical Corps who laid down their lives in the great war is now published. The total number of names given is 709, divided as follows:

Old and New Armies.		*Territorial Force.*	
Major-Generals ...	1	Colonels	2
Colonels	8	Lieutenant-Colonels	13
Lieutenant-Colonels	17	Majors	16
Majors	25	Captains	77
Captains	360	Lieutenants	5
Lieutenants	185		113
	596		

The list includes 4 V.C.s and 23 D.S.O.s. There are also the names of Sir Victor Horsley and Sir Charles Ball, 5 recipients of the C.M.G., and 2 of the O.B.E.

The Officers' Roll, comprising over 40,000 names in all, may be purchased from His Majesty's Stationery Office through any bookseller.

NEW RATES OF PAY FOR R.A.M.C. OFFICERS IN INDIA.

THE following revised rates of pay have been approved for officers of the R.A.M.C. in India. The new rates have effect from January 1st, 1920:

	Rs. per Mensem.
Lieutenant	650
Captain	800
Captain, after 6 years' total service	900
Captain, after 10 years' total service	950
Major	1,100
Major, after 15 years' total service	1,250
Major, after 18 years' total service	1,400
Lieut.-Colonel	1,550
Lieut.-Colonel, after 20 years' total service	1,650
Lieut.-Colonel, after 25 years' total service	1,850

Charge allowance for command of a British station hospital and specialist pay under para. 155 (*d*) iii and iv are admissible in addition.

DEATHS IN THE SERVICES.

COLONEL DAVID ERSKINE HUGHES, Bombay Medical Service (retired), died at Kensington on February 9th, aged 77. He was born on June 21st, 1843, the son of the late George Hughes, Writer to the Signet, Edinburgh; he was educated at Edinburgh, where he graduated M.D. in 1864, also taking the L.R.C.S.Edin. in the same year. He entered the I.M.S. on March 31st, 1866, became colonel on September 15th, 1892, and retired on September 15th, 1897. After sixteen years' military service he was appointed civil surgeon of Belgaum in 1882, and eight years later of Poona, the prize station of the Bombay Presidency. On promotion to the administrative grade he was posted as principal medical officer of the Bombay and Aden districts, retiring after his five years' tour of office in that part.

Lieut.-Colonel George Wardlaw Milne, R.A.M.C., died at Nordrach-on-Dee on February 7th. He was educated at the Universities of Edinburgh and Glasgow, graduating M.B. and C.M.Glasg. in 1901, and M.D. in 1911. He served as a civil surgeon in the South African war, gaining the Queen's medal; and subsequently joined the West African Medical Staff as a district medical officer in Nigeria; while in Africa he served as surgeon to the Uri-Omonohaa Expedition. He took a temporary commission as lieutenant in the R.A.M.C. on October 12th, 1914, became captain after a year's service, and on December 28th, 1918, was promoted to temporary lieutenant-colonel.

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a Congregation held on March 3rd the degree of Bachelor of Medicine was conferred on Philip G. Doyne.

UNIVERSITY OF CAMBRIDGE.

AT a Congregation held on March 5th the Board of Electors to the Sir William Dunn Professorship of Biochemistry was appointed as follows: Sir W. J. Pope, Mr. F. F. Blackman, Professor T. B. Wood, Mr. W. B. Hardy, and Professors W. M. Bayliss, J. N. Langley, J. Stanley Gardiner, and C. J. Martin.

The following medical degrees were conferred:

M.D.—E. J. Bradley.
M.B., B.CH.—A. G. Shurlock, N. W. Jenkin, H. B. Yates.
M.B.—E. E. Llewellyn.
B.CH.—F. N. Sidebotham.

UNIVERSITY OF LONDON.

THE following have been recognized as teachers of the University in the subjects and at the institutions indicated:

University College: Dr. G. Anrep (Physiology). *King's College:* Dr. James A. Hewitt (Physiology). *St. Thomas's Hospital Medical School:* Mr. B. C. Maybury, Mr. C. Max Page, and Mr. W. H. C. Romanis (Surgery). *Guy's Hospital Medical School:* Dr. N. Mutch (Pharmacology). *London Hospital Medical College:* Dr. C. B. Goulden (Ophthalmology). *Middlesex Hospital Medical School:* Dr. Eric L. Pearce Gould (Surgery), Dr. W. B. Tuck (Chemistry). *Royal London Ophthalmic Hospital:* Mr. B. T. Lang (Ophthalmology).

The Senate has resolved that in and after July, 1921, the first examination for medical degrees commence on the first Monday in July.

The regulations in the Faculty of Medicine for internal and external students (Red Book, 1920–21, pp. 268–9; Blue Book, September, 1920, p. 251) have been amended by the addition of the words "other than for Branch V" after the words "any candidate for the M.D. degree," and by the deletion of the words "in Branch V (State Medicine) of the thesis . . . written and of the practical portions of the examination."

Particulars regarding a further course of lectures on mental deficiency supplemented by a course of clinical instruction, arranged in co-operation with the Central Association for the Care of the Mentally Defective, to be held from May 23rd to June 4th, can be obtained on application to Miss Evelyn Fox, care of The University Extension Registrar, University of London.

Professor H. R. Kenwood has been appointed the representative of the University at the Congress of the Royal Sanitary Institute to be held at Folkestone in June. Dr. G. Newton Pitt has been reappointed to the Senate by the City and Guilds of London Institute for the period 1921–25. Professor Anne Louise McIlroy, O.B.E., has been admitted to the Faculty of Medicine.

Presentation Day will be held at the Albert Hall on May 5th instead of May 4th as formerly arranged.

Eight Beit fellowships for scientific research, of the annual value of £175, will be awarded in July. Forms of applications (which must be received by April 19th) and information can be obtained by letter only addressed to the Rector, Imperial College, South Kensington, S.W.7.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—*†W. A. Bryce, *A. R. Crane, †Z. Khaled, *G. G. Rigby, *†B. W. Roffey.

MEDICINE.—*†W. A. Bryce, *†O. G. Fisk, *M. Foley, *B. W. Roffey, *†H. W. Swann, †J. Solomonoff, *†M. Tcherny.

FORENSIC MEDICINE.—W. A. Bryce, E. C. T. Clouston, O. G. Fisk, M. Foley.

MIDWIFERY.—A. G. L. Brown, R. E. Williams.

* Section I. † Section II.

The Diploma of the Society has been granted to Messrs. Z. Khaled and H. W. Swann.

Medical News.

THE portrait of Sir Anthony Bowlby, by Sir William Llewellyn, R.A., will be presented to him in the Great Hall of St. Bartholomew's Hospital on Friday next, March 18th, at 3 o'clock. It will then be handed by Sir Anthony Bowlby to Viscount Sandhurst, the Treasurer, who will receive it on behalf of the governors.

WHEN the Prince of Wales attends the presentation ceremony at the University of London on May 5th to receive the honorary degrees of Master of Commerce and Doctor of Science a presentation will be made to him by graduates and teachers. It has been resolved that the presentation shall consist of an illuminated fourteenth-century manuscript containing a narrative in French verse of the life and exploits of Edward, Prince of Wales—the Black Prince. It contains a fine miniature of the Black Prince, with the motto, "Ich Dene." This spelling is of interest, as it shows the original form of the Prince's motto, which is characteristic of the Gelderland dialect, and not the high German form, "Ich Dien," which became customary later. The Principality of Gelderland was at the time linked to this country by a strong alliance. Subscriptions from graduates and teachers, ranging from two guineas to 10s. 6d., and from undergraduates, ranging from 10s. to 2s. 6d., are asked for to defray the cost of purchasing the manuscript; they should be sent to Dr. Walter W. Seton, at the University, South Kensington, S.W.

AN "At Home" was given by the Lady Emmott, J.P., Mrs. Anstruther, and Dr. Christine Murrell at the London (Royal Free Hospital) School of Medicine for Women on March 3rd, when the laboratories and lecture theatres were open to the guests; and short talks on the past, present, and future of the school and hospital were given by Lady Barrett, C.B.E., M.D., M.S., Dr. Louisa Garrett Anderson, C.B.E., Professor Winifred Cullis, O.B.E., and Dr. Dorothy Hare, C.B.E.

PROFESSOR LOUISE MCILROY, M.D., who has just been appointed by the Senate of the University of London Director of the Unit of Obstetrics and Gynaecology at the London School of Medicine for Women—the first of its kind organized in London—was present at the afternoon party given by their Majesties at Buckingham Palace on March 3rd.

DURING the celebration of foundation week at University College, London, Sir Francis Younghusband, K.C.S.I., will give the foundation oration before the Union Society on Thursday, March 17th, at 8.30 p.m.

SIR WILLIAM COLLINS has been appointed Chairman, and Sir Thomas Barlow Vice-Chairman, of the Central Council for District Nursing in London.

THE Commission appointed by the National Council for Combating Venereal Diseases and sent out to the Far Eastern Ports under the aegis of the Colonial Office has completed its itinerary and will arrive in England on March 14th. The medical member is Dr. Rupert Hallam of Sheffield.

DR. R. A. LYSTER, County Medical Officer for Hampshire, has been appointed a member of the Central Midwives Board on the nomination of the Society of Medical Officers of Health.

AT a meeting of the Illuminating Engineering Society in the house of the Royal Society of Arts, John Street, Adelphi, at 8 p.m. on Thursday, March 17th, there will be a discussion on motor-car headlights.

AT the York Assizes on March 3rd, Leonard Mayland, described as a herbalist, pleaded not guilty before Mr. Commissioner Hugo Young, K.C., to an indictment charging him with performing an illegal operation on a domestic servant on November 24th. The jury found the prisoner guilty and he was sentenced to one year's imprisonment.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Aitiology, Westrand, London;* telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediocre, Westrand, London;* telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin:* telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh;* telephone, 4361, Central).

QUERIES AND ANSWERS.

"J. T." asks for information as to the cause of cramp. What part is played respectively by the circulation, nerves, and muscles.

INCOME TAX.

"RESIDENT MEDICAL OFFICER" receives from his Board a monthly statement in the following terms:

	£	s.	d.
Salary for month	42	18	10
Less deduction for supplies	10	16	8
	32	2	2
Less superannuation	0	17	2
	31	5	0

The "deduction for supplies" represents the value of the board and lodging supplied; he asks whether he is assessable on the gross sum or on the net amount excluding the £10 16s. 8d. in question.

*** Our correspondent does not state the terms of his appointment. If he was appointed at a salary of £375 with board and lodging provided, then the value of the latter is not chargeable to tax; if, however, he was appointed at a salary of, say, £500, on condition that he bore the reasonable cost of

his board, then the £500 is taxable. The point is that an emolument in kind is not within the liability, and the monthly valuation of that emolument does not seem to affect the question.

"J. B." states that during his absence on military service his "practice was run at a loss if the usual expenses are allowed." He asks whether he can claim repayment of tax in respect of the losses.

*** Such claims are required to be made within the year following that in which the loss was incurred, though our correspondent might perhaps obtain some extension of that time limit in view of the cause of his absence. But we have some doubt as to whether "the usual expenses," including proportion of rent, rates, etc., could be claimed if the work of the practice was being performed by his colleagues as from other premises.

"S. H. S." inquires as to the method by which the allowance for the cost of renewal of a car is made.

*** The cost is treated as a professional expense as for the year in which it is incurred; it is not dealt with as a deduction from the average of the three years, though that is the method of the "depreciation" allowance. Thus £250 expended in 1920 would not affect the 1920–21 assessment, which is based on the average profits of 1917, 1918, and 1919; if the three years' average system holds good for the future the allowance will work itself out accordingly, but whether that system will continue will presumably not be known until the Chancellor of the Exchequer makes his Budget statement.

LETTERS, NOTES, ETC.

AN ACID DENTIFRICE.

DR. W. J. HENSON (London, W.) writes: For some years past I have been annoyed by the fact that my children's teeth, in spite of heavy dentist's bills, have been rapidly and constantly decaying while their grandparents' teeth are still fairly sound. On inquiry I found that the latter from their youth used only a mixture of willow charcoal and salt while my children have spent many pounds in the largely advertised tooth creams and pastes, chiefly of American origin, that have become so popular. I have heard more than one of my patients say that dentists had complained that doctors took little account of the great prevalence of pyorrhoea and dental caries. I have, however, been diligently seeking the cause and a remedy for a number of years, but it was only on reading Dr. Sim Wallace's pioneer work and Professor Pickerel's Cartwright Prize Essay of the Royal College of Surgeons on the subject, in which the latter emphasizes the fact that the prime cause of these diseases is the alkaline dentifrices which are still flooding the market under glowing colours, that I was put on the right track. I have tested every well-known tooth paste and powder, but I have not found a single preparation which was not powerfully alkaline, the only result being the retarding of the natural flow of the saliva, which is Nature's own preventive of decay. I also found that carbolic tooth powder, although a very pleasant and popular dentifrice, is another serious cause of dental troubles. Apparently the reason of the disuse of willow charcoal was that being insoluble it was apt to be brushed in between the teeth and gums and there leave a black line. Seeing a notice of "unoline" nitrate, a colourless salt prepared from willow charcoal, I tested it and found it apparently possessed all the preservative qualities of the charcoal itself. I combined this with fruit acids and a soluble antiseptic, with the result that a preparation has been produced and has proved highly efficacious to my patients and members of my own family. I have not yet seen a single case of recurring dental decay or pyorrhoea in any who have used it. Messrs. W. E. Lowe and Co., Ltd., of 8, Stafford Street, Bond Street, W., are now preparing this in paste form under the title of "Willocine" dentifrice.

THE DENTISTS BILL.

MR. J. MENZIES CAMPBELL, L.D.S., D.D.S. (Glasgow, W.), in the course of a letter on this subject, writes:

The Dentists Bill, 1920, which is the outcome of a report by a Departmental Committee appointed to inquire into the extent and gravity of the evils of dental practice by persons not registered under the Dentists Act, 1878, has now been presented to Parliament, but it is full of loopholes and treats symptoms only. Unqualified dental practice is not prohibited, and it seems grossly unfair that those who uphold the law are to be compelled to make very substantial sacrifices without any guarantee that the practice of dental surgery will only be carried on in the future by registered dentists. An Act was passed on July 22nd, 1878, prohibiting unqualified dental practice in the future, and the names of those in practice on that date were inserted in the *Dentists' Register*. If Parliament proposes to reopen the *Register*, the medical and dental professions are justified in demanding that the defects in the 1878 Act shall not be repeated. Untrained individuals pursue the calling in Great Britain to-day, and every medical and dental practitioner is aware of the irreparable damage that ensues. It is interesting to note that there are, amongst the unregistered dental practitioners in our cities, those who previously earned their livelihood as scene-shifters in theatres, drapers' and grocers' assistants, butchers and miners. This bill purposes placing on the *Dentists' Register* the names of all individuals who have been in practice for five years and conferring on them the title of "dentist" or "dental practitioner." If this should be done, an opportunity will not thereafter be afforded the public of discriminating between those who have undergone a four years' course of training and passed examinations, and those who have been presented with a title by an Act of Parliament. A very glaring omission from the bill is a clause constituting a tribunal to consider and investigate all claims for admission to the *Register*.

Another very objectionable feature in the bill is the retention of dental companies. The General Medical Council and the British Dental Association are both entirely opposed to these companies, and the latter suggests that the practice of dentistry by companies be entirely prohibited, with an equitable arrangement for present shareholders withdrawing their money from business. If this bill be passed, however, the public must be prepared for the rapid growth of such undesirable concerns all over the country. This is a serious matter for the general public, who expect to receive individual attention from licentiates of dental surgery, and, further, no incentive will be offered to young men to follow the profession of dentistry, because these numerous trading companies would throttle private practice.

Every L.D.S. earnestly desires to see the profession augmented, but no one is prepared to allow it to be ruined in an attempt to provide an alleged cure for the irregularities existing at the present time. Surely justice would have been meted out to the present unregistered practitioners if those who had been in practice on their own behalf for a period of five years were admitted to a special list and given the description of "operating dental mechanic," while canvassing and advertising were prohibited; and those thus admitted would be encouraged to qualify for the dental diploma without the necessity of passing the preliminary examination. It might also be desirable to modify the professional studies for this body of men. Those who were not admitted to the special list could easily procure a living at their own trade of mechanical dentistry. There are many other objectionable features in the bill, which space does not here permit me to discuss, but every effort should be made to compel politicians to leave the dental profession under the guidance and control of the General Medical Council, which is the proper authority to suggest any modifications in the curriculum.

THE LATE MR. J. H. MCFADDEN.

DR. H. C. ROSS (London, W.) writes: A tribute is due to the memory of John Howard McFadden, who died at Philadelphia on February 16th, aged 70. He was one of those unostentatious philanthropists who help to make progress. Although he knew that he was attacking a problem which he could never hope to solve, he cheerfully started and entirely supported for six years a cancer research organization at the Lister Institute of Preventive Medicine in London. He gave *carte blanche*, and later on extended the investigations to other branches of medical research, even sending expeditions to investigate pellagra in the United States. The researches made in association with the Home Office into the cause of industrial cancer at the briquette works are to the credit of Mr. McFadden, who received the thanks of the Secretary of State for what he called his "spade work"; he never courted publicity. John H. McFadden was a remarkable personality. He was a judge of pictures, and collected a fine gallery of eighteenth-century English art.

"TWILIGHT SLEEP": CORRECTION.

WE regret that in the report of Dr. Haultain's paper on "Twilight Sleep" in our last issue a misprint occurred through damage to the type after it had left this office. In the 29th line, first column of page 341, the dose of hyoscine should, of course, be 1/150 grain and not 1/50.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 30, 31, 34, 35, and 36 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 32, 33, and 34.

THE appointments of certifying factory surgeons at Clevedon (Somerset), Frome (Somerset), and Horsforth (Yorks West Riding) are vacant.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
Each additional line...	0	1	6
Whole single column (three columns to page)	7	10	0
Half single column	3	15	0
Half page	10	0	0
Whole page	20	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.